American
Vegetable Grower
and MARKET GROWERS JOURNAL

APRIL • 1958

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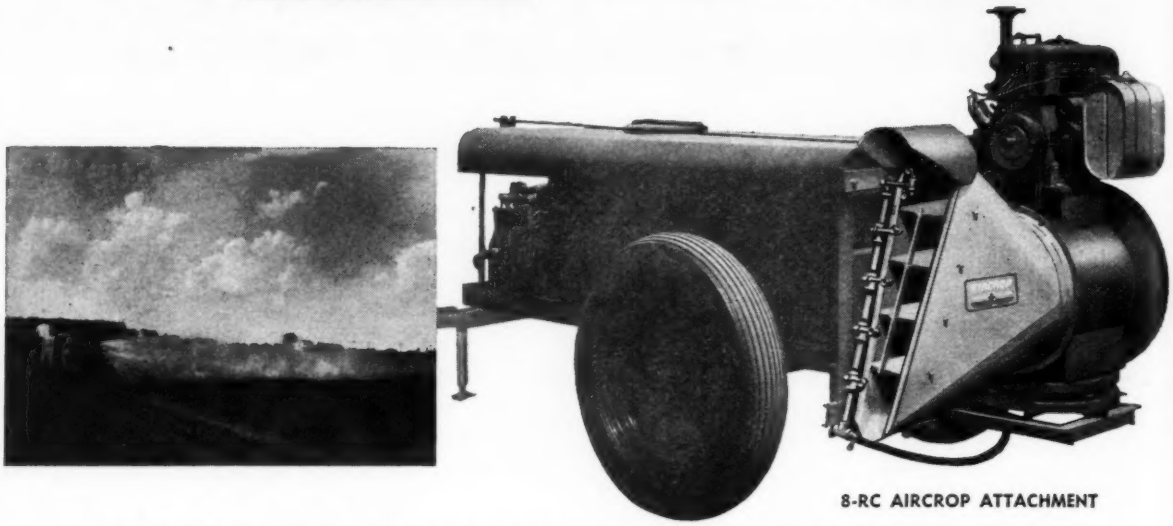
STACK

- Progress Report on Gibberellin
- 20 Steps to Success in Growing Peppers
- Problem of Labor Racketeering
- Growing Sweets in the South

Ways to Beat Jack Frost

Complete, low cost crop protection with John BEAN AIRCROP ATTACHMENTS



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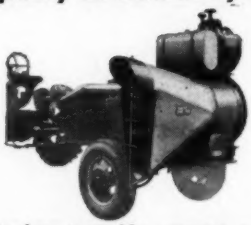

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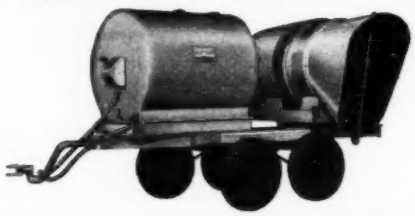

A *complete* spraying unit, the 40-RC can cover up to 250 acres per day. Sprays a 90 to 100 foot swath at the rate of 30 to 45 acres per hour at 4 mph ground speed. Discharge head rotates 210° to take full advantage of wind direction.

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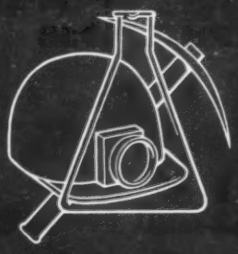

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A chemically stable copper fungicide containing not less than 53% metallic copper. . . . For spraying or dusting truck and citrus crops. Especially effective in controlling persistent fungus diseases. Prevent fungus diseases through application of Tri-Basic Copper Sulfate before fungus attacks.

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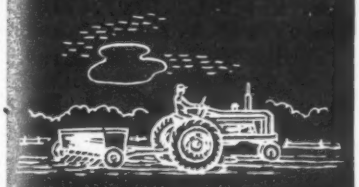

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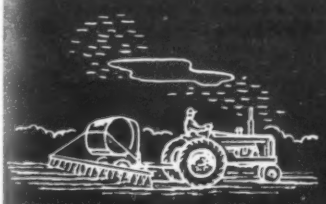

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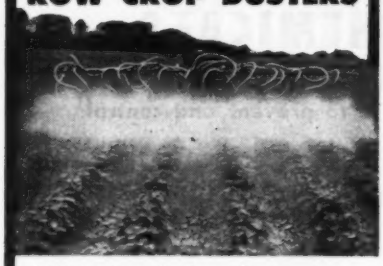

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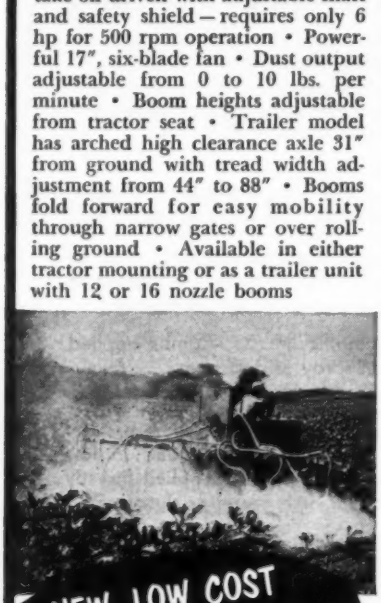

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American Vegetable Grower

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Market Growers Journal

VOL. 6 No. 4

APRIL, 1958

Cover photograph, courtesy USDA, shows contour planted tomatoes under plant protectors

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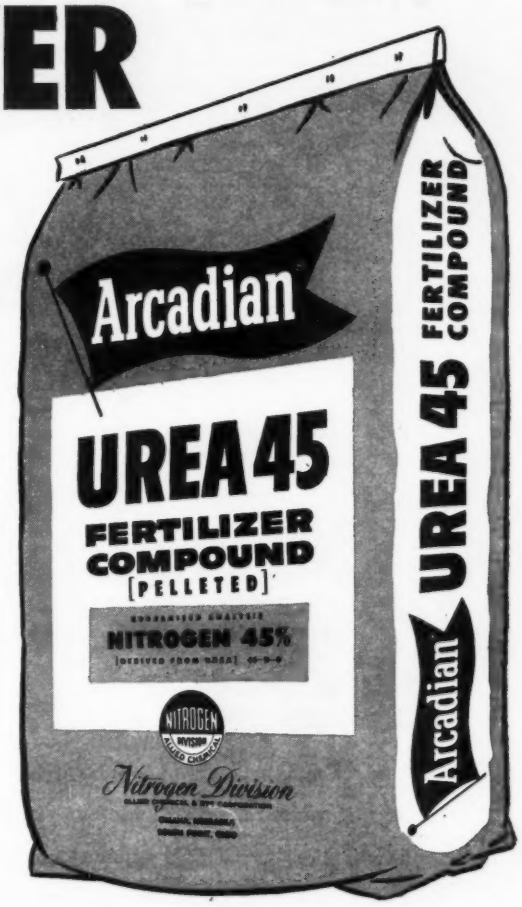

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This powerful 45% nitrogen fertilizer makes fast, efficient work of nitrogen application to produce high yields of top-quality crops. The firm, free-flowing pellets are easy to apply in any fertilizer distributor. They dissolve readily in irrigation water, so water can do the work of spreading nitrogen grow power. You get 36 pounds of actual nitrogen in every 80-pound bag of ARCADIAN® UREA 45. And it is all high-quality urea nitrogen, quick-acting, long-lasting and leach resistant. Any way you use it, ARCADIAN UREA 45 is a labor-saver and a profit-maker. Get ARCADIAN UREA 45 now and use it now!

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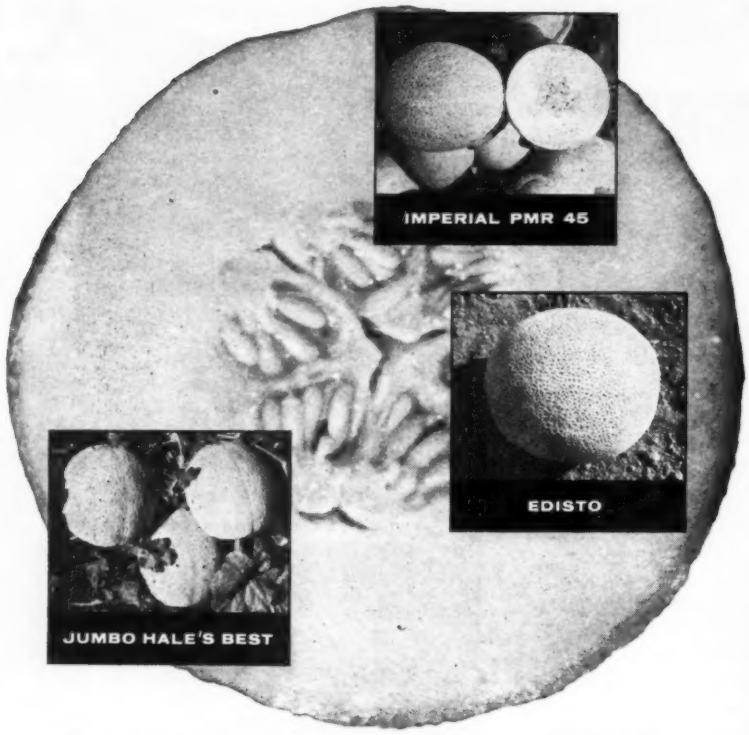

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LETTERS
TO THE EDITOR

Tomatoes Under Plastic

Dear Editor:

After reading AMERICAN VEGETABLE GROWER I got information and built an 18 x 40 plastic greenhouse. I have already planted seed of Tucker's Forcing X Ohio W3 tomato. However, from here on in I need all the information I can get about pruning, pollination, etc. Can you help?

Riverdale, Mich. Elbert Robinson

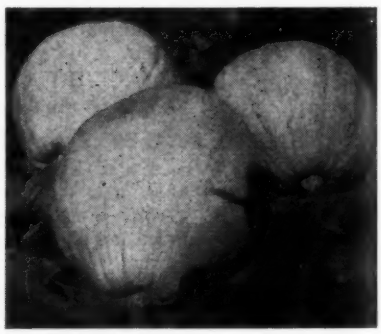
Send for Ext. Bul. 411 entitled, Vegetable Production in Plastic Greenhouses, issued *by Purdue University, Lafayette, Ind., and Leaf. 169 entitled,* Growing Tomatoes in Plastic Greenhouses, *available from University of Kentucky, Lexington, Ky.—Ed.*

Giant Squash

Dear Editor:

Your October cover shows a picture of pumpkins. They are nice. I am mailing you a picture of three squash we grew this past summer weighing 103, 89, and 79 pounds, respectively.

Williamsport, Pa. Fred T. Autes



Winter Farming

Dear Editor:

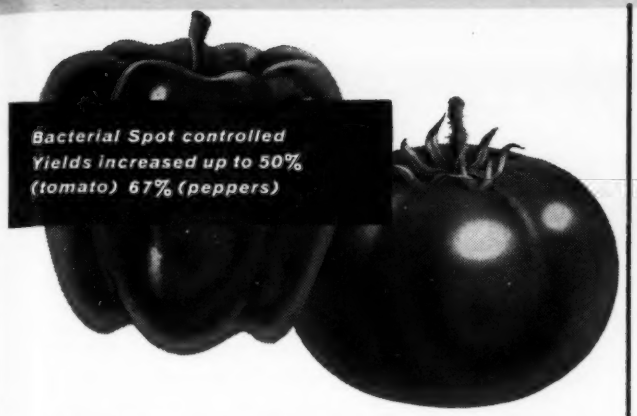
I am an ex-vegetable grower, having started in the business in Muscatine County, Iowa, in 1930. In 1936 I came to Florida and farmed a small acreage near Miami in 1937, hauling my equipment from Iowa.

Back and forth, winter in Florida, summer in Iowa, was the program until the war years made traveling impossible and we decided to stay in Florida. In 1940 we went to Belle Glade and the business grew pretty fast. Your magazine printed a picture of one of my fields on the June, 1947 cover. Soon after this we sold our interest in Belle Glade, moved to West Palm Beach, and started farming in the Pompano area. In the past few years land values have increased from a few dollars per acre to thousands.

The vegetable business is a good business and we like to encourage others to find the right place and to make the best use of time, land, and know how. We need good, experienced trellis tomato growers for the vine-ripe business here in Florida. Rapid transportation and direct selling has made possible a tasty tomato for northern consumers.

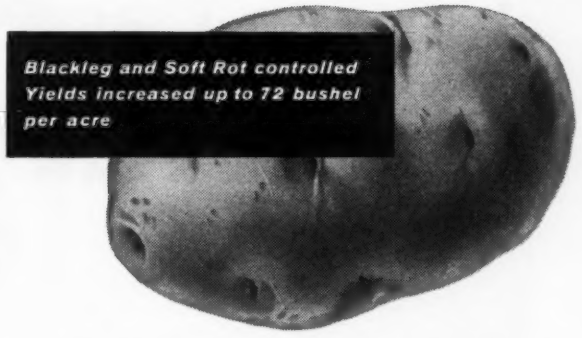
We appreciate your good magazine and thank you for the fine service it is rendering the growing industry.

Boynton Beach, Fla. E. H. Borchardt



Bacterial Spot controlled
Yields increased up to 50% (tomato) 67% (peppers)

(Start spraying seedlings in seed beds with 200 ppm solution when first true leaves appear, and continue spraying plants in the field every fifth day until fruit is set. Gives prolonged disease-fighting protection.)



Blackleg and Soft Rot controlled
Yields increased up to 72 bushel per acre

(Soak cut seed pieces in 100 ppm solution for one minute. Completely compatible with the fungicide of your choice and used in combination controls both fungal and bacterial diseases in one treatment.)

Bacterial Blight controlled
Yields increased through disease control

(Apply 200 ppm spray solution when seedlings are in two-leaf stage. Continue spray applications every five days for disease-free seedlings that develop into faster growing, heavier rooted, better foliated plants.)

Angular Leaf Spot controlled
Produce high-quality disease-free fruit for premium prices

(Apply 200 ppm solution to plants after emergence in the field. Continue spraying at five day intervals until fruit sets. For curative action, spray at 400 ppm for three applications at five day intervals.)

Agri-mycin® 100 controls disease, increases yields!

These results—from controlled experiment station tests made with cooperating growers—show how the extra yield at harvest time can pay many times over the small cost of protecting your plantings against disease outbreaks.

The bigger yield from Agri-mycin-treated plots is also of *better quality*. Larger fruit, with far less spotting, scarring or cracking brings a high price per pound.

Give your vegetable plantings the double protection of Agri-mycin (the only spray containing both streptomycin and Terramycin*), The disease-fighting antibiotics in Agri-mycin give prolonged protection because they are absorbed into the leaves and stems instead of being washed off by the first rain. The disease-free seedlings develop into faster growing, heavier rooted, better foliated plants that can bear a bigger crop.

Agri-mycin 100 is now available from leading suppliers of agricultural chemicals.

For control of Bacterial Spot of Tomatoes and Peppers; Blackleg and Soft Rot of Potato; Bacterial Blight of Celery; Angular Leaf Spot of Cucumber

9.34-oz. bottle makes 50-100 gallons of spray. Economy-size 25-lb. drum makes 2,125 to 4,250 gallons of spray.

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for foliar application

because of its

low biuret

(Less than 0.2%)

Completely water soluble, too!

New **Agricultural Grade**

Grace Crystal Urea

Fertilizer Compound

✓ **Makes Possible Maximum Yields *and* Top Quality.**

✓ **Saves Time, Labor, Equipment.**

✓ **Safe! Especially Formulated for Foliar Application.**

Because the nitrogen in new Grace Agricultural Grade Crystal Urea is *immediately* available to plants, the use of Grace Agricultural Grade Crystal Urea is the easy way to get maximum yields *and* top quality.

You can add Grace Agricultural Grade Crystal Urea to your regular insecticide or fungicide formulations and spray it at the same time you apply these other materials. By doing two jobs at once, you free men and equipment for other work. You save time, labor and equipment.

The low biuret content of Grace Agricultural Grade Crystal Urea gives you concentrated nitrogen (46%) that's *completely safe* for foliar application.

It takes only a few days for you to see the response after spraying. The nitrogen goes to work almost at once. You'll see the improvement in foliage, color or growth, even when soil conditions are poor. For example, when there is excessive dryness, wetness, cold or leaching from heavy rains, response from foliar feeding with Grace Agricultural Grade Crystal Urea is good—and fast.

The crystals dissolve readily and completely, won't clog spray hoses, valves or nozzles. Solutions of Grace Agricultural Grade Crystal Urea are non-corrosive—won't harm rubber, metal or wood. And this superior urea is compatible with commonly used spray materials. Use Grace Agricultural Grade Crystal Urea with confidence. You'll profit.

FOR SOIL APPLICATION use free-flowing Grace Urea Prills. Guaranteed 45% Nitrogen. Ideal for Top-Dressing or Side-Dressing of fruits and vegetables, as well as field crops.

Grace Chemical Company *A Division of W. R. Grace & Co.*

MEMPHIS, TENNESSEE

What Research Has Learned about GIBBERELLIN

Greenhouse and field tests show new growth regulator holds promise of profitable use in crop production

By S. H. WITTWER and M. J. BUKOVAC
Michigan State University

Petiole length of celery treated with gibberellin at Thomas Bosgraaf and Sons, Hudsonville, Mich., averaged 10 inches (right row, background); 8 inches for control (no treatment, left). Treated stalks were 40% heavier.

DURING the past year the effects of gibberellin on plant behavior have attracted wide attention. Thousands of man hours have been expended in testing its effects on crops grown in greenhouses and in the field.

For those who have carefully studied the effects of this new chemical on vegetable crops the unexpected has often been observed. Dwarf peas and bush beans grow as tall types. Cabbage, Chinese cabbage, lettuce, and endive no longer head but form sudstalks up to 15 feet high. Root crops (carrot, beet, parsnip, turnip, rutabagas, radish, horseradish) and some leafy vegetables (mustard, kale, collards, spinach) produce sudstalks weeks, sometimes months earlier.

Gibberellin speeds up emergence of beans (Saniac variety). Left to right: control; Delsan A-D only, Delsan A-D plus 500, 1000, 2500, 5000, 10,000, and 25,000 p.p.m. gibberellin.

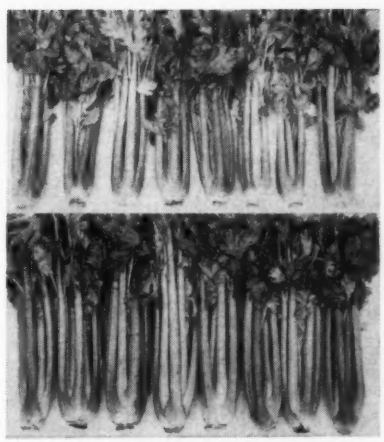
Flowering in peppers, cucumbers, and muskmelons is delayed. Male sterility is induced in sweet corn. Substantial yield increases occur in asparagus, celery, parsley, and field-grown rhubarb. Fruit without pollination is stimulated in tomatoes, peppers, eggplant, and cucumbers. Seed treatment of peas, beans, and sweet corn and of potato tubers results in earlier emergence and speedier growth of seedlings.

In gibberellin a powerful chemical regulator of plant development has been discovered. The challenge now is to direct the chemically induced changes toward profitable uses in crop production.

Crops treated with gibberellin have produced more and larger leaves, longer leaf petioles, and taller stems. This effect may prove potentially useful in the commercial production of celery, parsley, rhubarb, and asparagus, but not with sweet corn.

In extensive field trials the length and weight of celery stalks have been increased by 20 to 50%. From 3 to 15 grams per acre of gibberellin applied, as a foliar spray, about three weeks before anticipated harvest have been most effective. Results with asparagus and parsley are promising but not conclusive. Field-grown rhubarb plants from one-year-old roots doubled in size within three weeks

(*Continued on page* 52)



Top: control. Bottom: 15 grams per acre of gibberellin applied on Utah 10-B celery 21 days before harvest, petiole length and stalk size increased 25 to 40%. Test was conducted at William Bolthouse farms, Cedar Springs, Mich.

Ways to beat JACK FROST ..in the South..West..East

Techniques Used in FLORIDA

By MASON E. MARVEL
University of Florida, Gainesville

FROST and freezes occur almost every winter in north Florida as well as in parts of the central area, and may occur in the southern section. To cope with extremely cold weather this past growing season, growers have tried practical and some impractical methods to prevent frost and freeze damage on vegetables.

There are several factors other than just freezing to consider in the prevention of cold injury.

The first is cold injury without frost which occurs on many crops that have been growing in more or less optimum temperature conditions and then are abruptly subjected to temperatures near freezing.

Take tomatoes as an example. Vegetative growth is immediately slowed down because of decreased uptake of nutrients and water. Pollen viability and fruit set are reduced and, in some cases, a heavy drop of blossoms will occur. In other cases, only partial pollination takes place so that such disorders as puffy fruit with only partially filled locules or "cat facing" and misshapen fruit develop. Fruits that have already set, particularly fruits nearing maturity, may appear unharmed but may not develop the desired red color in ripening.

Many of these same symptoms occur on eggplant, peppers, squash, and snap beans.

Frost injury due to radiation cooling may occur when the air temperature is as high as 40° F., while the temperature of the plant surface drops to 32° F. This is the most frequent type of cold experienced in Florida. The previously described symptoms occur, plus the formation of ice crystals in the cells of exposed plant tissues which, in thawing, rupture the cells and kill them. This can take place on leaves, fruit, terminal growth, and, in more severe cases, on very tender plants, which are completely killed.

Freezing air 32° F. or lower moving into an area is the most destructive. The same symptoms occur as in cold injury from frost, but are usually more serious. Generally all crops except the most hardy, such as cabbage and lettuce, are destroyed.

One of the most used "methods" of frost prevention is non-cultivation.

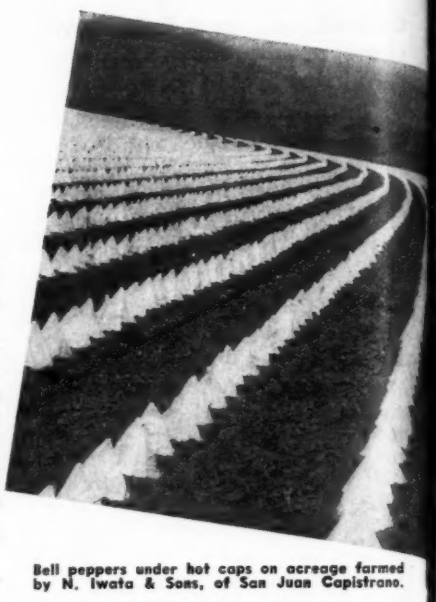
Bare compact soil will give greater protection for plants than freshly cultivated or mulched soil. Soil with a high moisture content gives more protection than dry soil. Loose, dry soil is a good insulator; it retards the rate at which the soil will absorb heat, and it will slow down the release of heat when the air temperature is lower than the soil temperature. Water has a greater capacity for both absorption and release of heat than soil, so that compact, undisturbed, high moisture content soil affords the greatest protection.

This is of greater importance in organic soils than on mineral soils. Organic materials (muck and peat) are better insulators than mineral soils and are found in low areas where frosts are usually most severe. Small or young plants, being nearer the source of heat, are more likely to escape frost damage than larger plants.

Many of the older areas that have permanent overhead Skinner irrigation systems use them for frost protection. Newer portable systems with rotating sprinklers are also used to a limited extent. However, these are not too satisfactory because usually only a small part of the total area can be effectively covered at one time.

The result of work done in Europe and this country on the effectiveness of irrigation has brought out these points: One-tenth inch of water per hour is sufficient for frost protection. Application of water should not begin until just prior to actual formation of frost, and droplet size

(*Continued on page* 54)

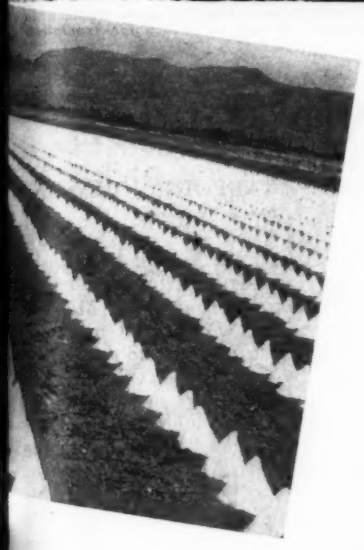


Bell peppers under hot caps on acreage farmed by N. Iwata & Sons, of San Juan Capistrano.

Tomato plant is being covered with a hot cap.

Kraft brushing paper supported by arrow weed used on tomato plants in California's Imperial Valley.

Low brushing (15-inch) supported by lath protects tomato nursery beds in Coachella Valley.



CALIFORNIA
Uses These Methods

By C. ALLAN SHADBOLT
University of California, Riverside

MANY of the warm season crops grown in California are planted at a time which is unfavorable as far as their temperature requirements are concerned.

Therefore it is desirable to provide an environment suitable for good growth. Most of these devices have a dual purpose—to provide more favorable growing temperatures during the day and to protect from frost at night.

By far the most extensive method of frost protection is the use of hot caps. These are used on a number of different crops in many areas.

The largest concentration of caps is in use in the desert valleys of Imperial and Palo Verde, where 6000 acres of cantaloupe and other melons were covered last season. Most of these caps are made from glassine sheets which are formed in the field over wooden or wire splints. These are applied immediately after seeding in late December, January, and early February. During February, the caps are lifted, and the plants are weeded and thinned. The cap is then replaced, leaving one end open for ventilation and hardening of the plants prior to complete cap removal sometime in March, when frost danger has passed.

Much smaller scale capping operations occur in the coastal areas, and the intermediate valleys between the coast and the desert. Several hundred acres of tomato transplants are covered with waxed paper caps each year. A smaller acreage of cucumbers is covered in San Diego County.

Experiments in Imperial Valley have shown that glassine caps offer about 5° of protection under typical radiation frost conditions. This is sufficient to protect from most frosts which occur in this area. Glassine is preferred over waxed paper in the desert areas because of its greater permeability to moisture. This provides for a lower humidity and less water accumulation on the inside of the cap.

In the coastal areas, waxed paper is used exclusively, as the glassine does not withstand rainfall conditions.

Continuous covers which are still in the experimental stage have been shown to give greater early growth in cantaloupes than the conventional individual cap. Polyethylene used as either individual caps or continuous covers has given somewhat better results than glassine.

Another method of protection in use almost exclusively in the desert areas is "brush" or paper. This consists of kraft paper shields erected 30 to 35° from the vertical and sloping south over the rows. These are supported by arrow weed, palm fronds, or lath.

About 2500 acres of tomatoes, peppers, and eggplant are brushed in this manner in the Coachella Valley. Both 15- and 36-inch paper is used, depending upon the ultimate height of the crop before the brush is removed.

In the Imperial Valley, upwards of 1000 acres of capped cantaloupe have the additional protection of brush. This practice hastens maturity by about two or three weeks. A recent study has shown that the color or material used for brushing has no significant effect on the growth of cantaloupes. Aluminum foil, when compared with kraft, red, and black paper, resulted in slightly higher soil temperatures and faster emergence, but this difference was not apparent later in the season.

In the Coachella Valley, natural hot water (about 100° F.) is run in the irrigation furrows during a freeze. Both here, and in the coastal areas, regular irrigation water is also used in this manner. This has been found to provide only limited frost protection, and is of benefit only during a mild frost.

Wind machines and orchard heaters are used to a limited extent in the Coachella Valley. THE END.

Turn the page to learn how growers in the East combat frost →

FROST CONTROL

WISCONSIN

By JOHN A. SCHOENEMANN
University of Wisconsin

FROST is a problem in New Jersey when tender plants are small and the investment loss includes only the replacement cost of plants and labor of re-setting them. As a result, a New Jersey grower does not feel he can stand as great an expense to protect his young plants.

Growers who use Skinner overhead irrigation pipe equipped with fine mist nozzles find this method excellent to ward off frost. The water rarely has a temperature below 50° F. even in midwinter, which allows heat exchange to protect the plants. Even plants with ice on them survive. Portable sprinkler irrigation is thought less desirable than mist.

Plants produced in the North can be moderately hardened against frost before setting in the field. Reduced watering or lower temperatures harden plants, but over-hardened plants will be slow maturing. A successful grower makes sure he does not give his plants too much nitrogen, which encourages soft, frost-tender top growth.

To escape frequent losses, growers, before planting, should check local dates after which frost is not likely to occur.

Although the use of such protective covers as hot caps, baskets, or other heat-conserving materials are not practical on large farms, they are used in a limited way on small acreages and in home gardens. Salt hay, layers of burlap, and even blankets and rugs are sometimes used. Plastic films have not yet been used extensively in New Jersey for protection in the field.

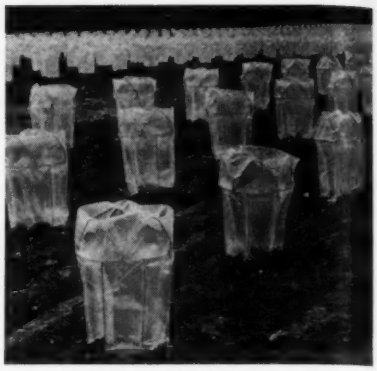
In May, 1956, some growers thought their attempts at frost protection had failed. Plants were killed. The trouble was not frost but a freeze. Freezes, unlike frosts, are the result of cold air masses moving into the area and generally are accompanied by wind and a fast drop in temperature. Frosts result from local cooling, usually in calm air.

Several growers had used cedar shavings, rubber tires, and anything that would form a dense cloud to prevent heat loss from near the ground at night. The wind accompanying the freeze brought air that was too cold and also tended to move the smoky cloud away.

A bulletin entitled *Frost Protection for Vegetables*, by Phil A. Minges, may be obtained by writing Department of Vegetable Crops, New York State College of Agriculture, Cornell University, Ithaca, N. Y.

Growers have found it profitable after plants are set in the field to wait until they are well established before cultivating. In 1956, fields that had been cultivated had many more damaged plants than those uncultivated prior to a severe frost. Cultivation stirs the soil and may make the plant start into growth quickly, but that also softens the plant, making it more susceptible to frost injury. Cultivated soil cools more readily and reaches a lower temperature sooner. THE END.

Some 10,000 tomato baskets cover newly-set plants in this Burlington County, New Jersey, field.



New polyethylene bonnets allow sunlight to enter and also may be opened for ventilation.

NEW JERSEY

By W. BRADFORD JOHNSON
Rutgers University

IN the southern half of Wisconsin our frost-free growing season usually ranges from about May 25 to September 15. In the northern part of the state the season averages at least two weeks less. Faced with this relatively short season, growers have an interest in various frost protection methods. Here are some practices which are used:

"Hardening" Transplants. This is one of the most common methods used by market gardeners. It is an easy way to obtain some measure of protection against light, late spring frosts after plants are put out in the field. It also helps to protect against wind injury, sunscald, and similar damage due to unfavorable growing conditions. The frost tolerance of crops such as cabbage can be substantially increased by hardening before field setting. This treatment thickens the outer tissue of leaves and stems, reduces the freezable water content of the plant, and increases the amount of certain plant materials in the plant cells which increases resistance to frost damage.

Short-season Varieties. Producers of frost-sensitive crops, like tomatoes, sometimes choose extra early maturing varieties. Such varieties can be set out after all danger of frost is past, yet they can still provide for relatively early harvest. Then, too, such varieties will have produced the major part of their potential yields before an early fall frost may occur. This is an easy and sure way to obtain early production without the expense of other protection measures or risk of plant loss.

Frost-tolerant Varieties. Unfortunately, at present, there are not

(*Continued on page* 55)

SWEETPOTATO GROWING *In the South*

How two successful growers — one in Mississippi, the other in Georgia — handle their sweets, from careful selection of variety to "kid glove" harvesting

By ELDON S. BANTA

ON his farm near Norman Park, Ga., Gene Adams grows two sweetpotato crops a year. Like many southern growers, he finds sweetpotato growing a profitable enterprise.

Selection of the best and most productive varieties depends upon soil and climate of the specific area as well as market demand. The South is planted heavily to the moist-fleshed varieties of the Porto Rico type, with little commercial acreage to the dry or mealy type found in Jersey varieties.

Disking sweetpotato land on Wilton Rogers farm near Collins, Miss. Ridges, or hills, are thrown up on the contour to help conserve soil and water.

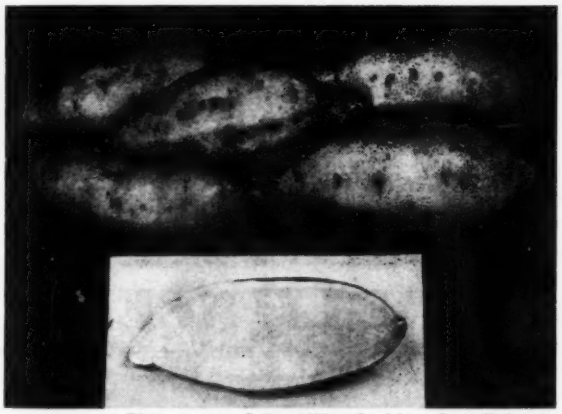


Photo courtesy Julian Miller, Louisiana State University

Goldrush variety: a cross section of interior of potato shows thin cortical layer, which makes it ideal for canning. Interior color is the same throughout. This variety is resistant to fusarium wilt.

Photo courtesy Chesley Hines, Mississippi State College

Broad-base, tractor-drawn plow is widely used in Mississippi for digging sweetpotatoes with least amount of cutting and bruising. The 14-16 inch plow is run off-center of the row to turn all the sweetpotatoes to one side and leave them still attached to stem.

Adams prefers the newer Goldrush variety for his early crop, but for the late crop he likes Georgia Red because of its heavier yields of quality roots.

Wilton G. Rogers, Collins, Miss., also favors the Goldrush variety, which was developed by Louisiana Experiment Station. It has made heavier yields of more uniform roots than the Porto Rico Unit 1, and it shows high resistance to stem rot. He has been trying the new Copperskin Goldrush which looks promising.

The Mississippi Experiment Station recently studied four varieties for their suitability to canning. Tops in quality was the Australian Canner variety, but it was lowest in yield. Porto Rico Unit 1 gave the lowest quality canned product and was third in yield. Allgold was the highest in yield, with Goldrush second. Because both ranked intermediate in canning quality in the test, they are recommended for Mississippi.

Most southern growers produce their own "slips" or "draws." Care is taken to produce only healthy and disease-free plants. Beds are put on new land where no sweetpotatoes have been grown before, hence plants have less chance of disease infection. Roots are carefully culled and all with slightest trace of disease are discarded. Healthy roots are treated just before planting by dipping them in either bichloride of mercury or borax solution. In mix-

(*Continued on page 57*)

STATE NEWS

- **State Tax Sought for Migrant Labor Camps in Florida**
- **West Texas Diverting to Vegetables in Face of Cotton and Grain Controls**

Vegetable Tax Proposal

FLORIDA—A penny a box tax on the state's fruits and vegetables to provide funds for building model labor camps for migrant workers has been suggested by James T. Vocelle, Industrial Commission chairman. The fund would also be used as emergency aid to migrant workers in weather disaster periods, says Vocelle. Rental of housing and recreation facilities to workers would make it a self-liquiding project eventually, according to Vocelle. He has proposed that the state legislature create a commission, to include representatives of the fruit and vegetable industry, to administer the fund.

Divert to Vegetables?

TEXAS—Because of governmental controls and low grain prices, many west Texas farmers have become interested in growing vegetables in order to utilize acres diverted from cotton and grain. Between 1949-54, cotton acreage in nine western counties decreased 10% and wheat acreage decreased 50%.

To help farmers get started in vegetables, Texas Agricultural Experiment Station has issued a new bulletin entitled *Potential Markets for West Texas Vegetables.* It can be obtained from R. D. Lewis, Director, at College Station, Tex.

The three leading vegetables grown in this area are potatoes, lettuce, and onions.

STILL NEED MIGRANT LABOR

The Puerto Rican agent of Garden State Service Association, which recruits migrant labor for farms in New Jersey, New York, Pennsylvania, and Delaware, has been reassured that the present economic recession will not necessarily mean a cutback in labor needs. Drought and adverse weather conditions would have a greater effect on seasonal labor, the agent was informed.

The study shows that with these crops, growers should be able to compete successfully for a share of the market in central United States cities. The study indicated that Colorado would be the major competitor to the west Texas area for onions, cabbage, and potatoes, while California would be the major competitor for cantaloupes, carrots, and lettuce. The potato market also is supplied by many other producing states, such as Idaho, Louisiana, Minnesota, North Dakota, South Dakota, and others.

43rd Annual Meet

OHIO—The Ohio Vegetable and Potato Growers Association held an enthusiastic and well-attended meeting recently in Columbus.

John A. Schoenemann, Wisconsin potato expert, explained how the use of conditioned seed boosted potato yields in Wisconsin. Seed was conditioned by taking it out of cold storage and holding it at temperatures of 60° and 70° for two or three weeks before planting.

Ohio potato growers also went on record against compulsory potato inspection and against changes in potato grade laws.

Otto Meyer, of Elmore, and Earl Luty, of Stryker, won top honors in the 1957 Ohio Top Ten Tomato Club. Meyer produced an adjusted tomato yield of 25.48 tons to the acre to win in the 3 to 15-acre class, and Luty produced 22.32 to the acre on 29.2 acres to win in the class for growers with 15 or more acres. Both men fertilized generously, used a starter solution in the transplanter water, had a near perfect stand in the field. Both applied maneb, an organic fungicide, to control foliage diseases and fruit rots.

See page 42 for State News Special Report

Phil Minges, New York vegetable expert, of Cornell University, told growers to provide markets with large volumes of uniform high quality packs to meet western competition.

Morris Allton, Ohio Farm Bureau staff member, told growers that the St. Lawrence Seaway will likely place many vegetable growers in competition for land, as business and industry seek room for expansion. He advised growers to support rural zoning as an effective tool for protecting land values.

Norman Oebker, of University of Illinois, gave growers a six-point program for cutting vegetable production costs.

Hold Out for Higher Price

CALIFORNIA—Yolo County tomato growers are holding out for $22.50-a-ton price for their 1958 crop. Hunt Foods, Inc., has offered $20 a ton.

At a recent meeting in Woodland, 101 growers representing 15,900 acres pledged themselves not to sign contracts with any canner for less than $22.50 per ton for rounds, $25 for redtops, and $27.50 for San Marzano. The group also agreed that no grower who has never before sold to Hunt Foods, Inc., will sign a contract this year. Any grower who has sold to Hunt previously will be permitted to sell to the company at the $22.50 price.

Placing phosphate fertilizer directly under tomato seed at planting time, at a depth of 2 inches, results in plants at thinning time about twice normal size,

(*Continued on page* 38)

Know Your . . . VEGETABLE SEEDS

By VICTOR R. BOSWELL
U.S. Department of Agriculture

FLORENCE FENNEL

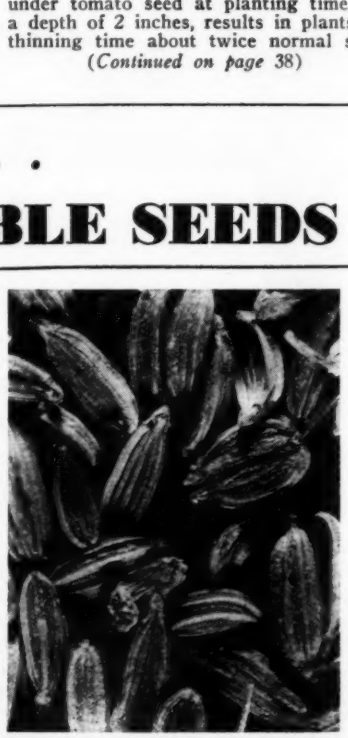
FLORENCE fennel or finocchio is little grown in the United States, but those who enjoy the high flavor of anise will find this vegetable of interest when used in the same way as celery, either cooked or raw.

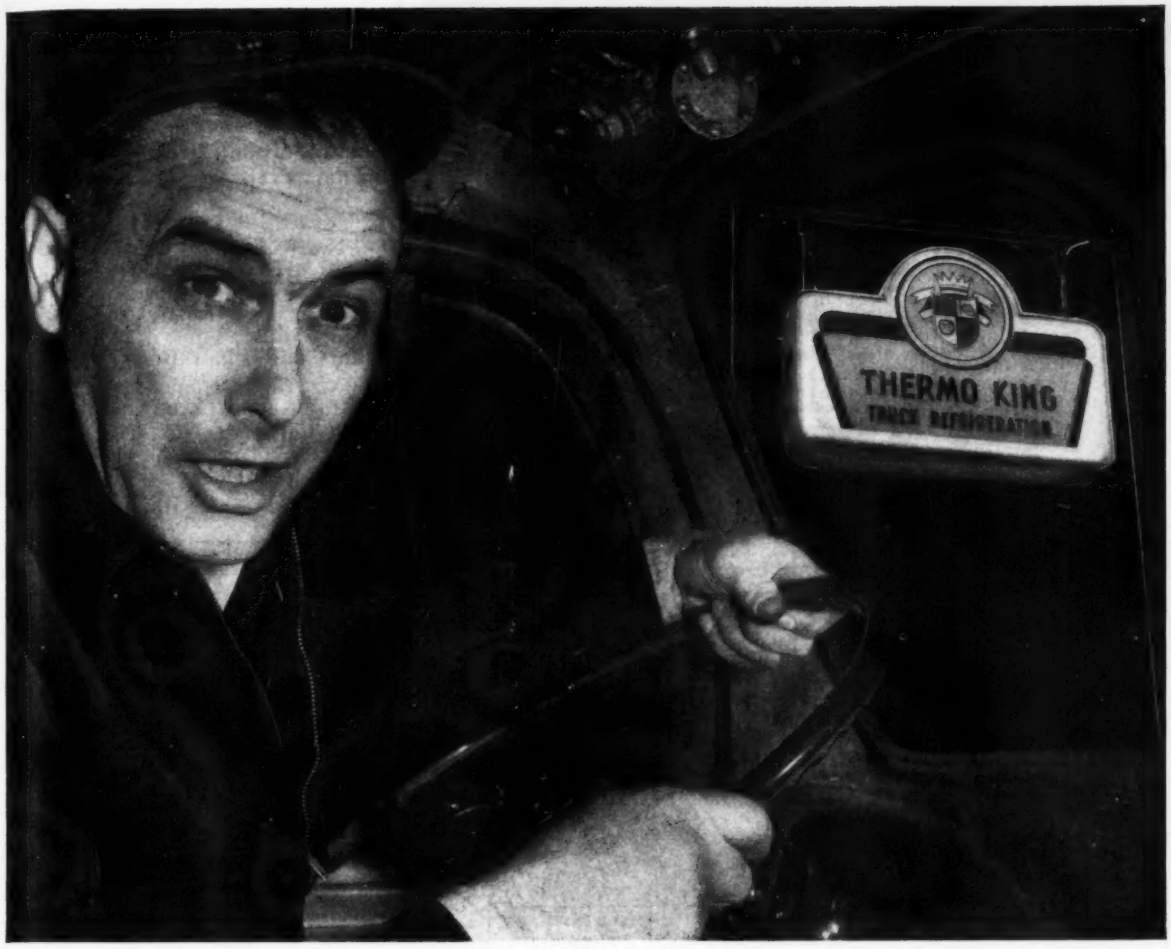
The seeds of Florence fennel are typical of members of the carrot family. Each "seed" is actually one part of a two-parted fruit called a schizocarp. Each part of this fruit contains one true seed. The "seeds" are much larger than carrot seeds, proportionately longer, and are heavily ribbed like carrot seeds, but are without spines. In the illustration two of the seeds are still attached to the tiny stalk on which they developed.

Florence fennel is such a minor crop in the United States that there are no available figures on the production or importation of seeds, or on the acreage or production of the vegetable for food.

Although the plant is a perennial it is normally grown and harvested for food like an annual. In the home garden most families would want to grow no more than a few feet of a row, perhaps; but it is well worth knowing.

Since Florence fennel does not cross with other members of the carrot family there is no need to isolate it in the production of seed.





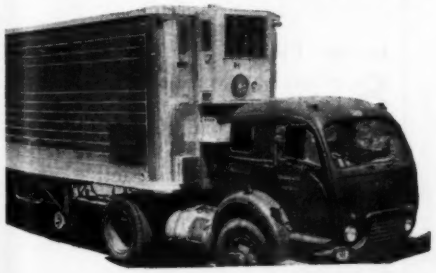
That's the sixth Thermo King service sign I've passed today!

I'm a trucker. I haul perishables, and that's no picnic. But one thing I'm sold on: that's Thermo King service. Their Service Stations cover the truck routes like a blanket. In fact, that's the sixth "Factory Authorized Service" sign of theirs I've passed since my last coffee stop.

I know from experience that those fellows inside really know their business—'been trained back at the factory. The last time I stopped for service, they had me out in less time than it took to have a piece of pie and a cup of coffee. Why, they had a whole wall full of factory parts and replacement units ready to keep me rolling. Those guys are the best dog-gone insurance against loss of time and delay that I have. Besides, just knowing they're there keeps me from getting a nervous stomach.

Take it from me. Thermo King is long on service. And in this business, Service really counts!

There are Thermo King factory authorized service stations located on all the major truck routes in the U. S., Canada, Mexico and many countries overseas.



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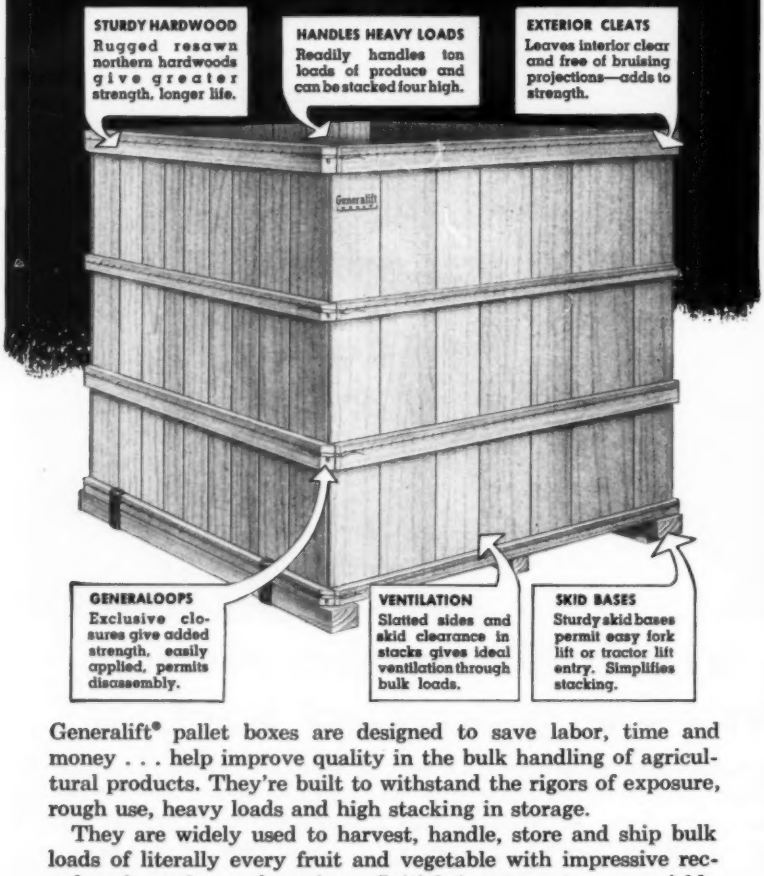
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Pepper Production:

20 STEPS TO SUCCESS

North Carolina growers produce earlier crop at greater profit

SUCCESSFUL pepper growers in North Carolina are following the 20 steps listed below. They are producing earlier peppers, more peppers, and better peppers.

Plants and Plant Beds

1 Use the recommended varieties. In North Carolina they are Early Calwonder (70 days); California Wonder (75 days); or Yolo Wonder (80 days).

2 Buy California-grown, disease-free seed or treat the seed with mercuric chloride solution (1-2000 solution). All seed should also be treated with a chemical dust (such as Arasan) before planting.

3 Locate plant beds in a convenient place and on new land each year. If not on new land, use new soil. Sterilize soil with methyl bromide at rate of 2 pounds per 100 square feet. Use a rich, well-drained soil that does not pack easily.

4 Fertilize plant bed soil with ¾ pound of a plant bed fertilizer (such as 4-9-3) per square yard. Plant bed should be in perfect physical shape before seeding.

5 If damping-off appears *drench plant bed with Semesan, captan* (Orthocide 50W and Stauffer Captan 50-W), *or ferbam* (according to manufacturers' directions). Spray or dust with ferbam, zineb, or maneb if blue mold appears in plant bed.

6 Water plant beds thoroughly when needed. Watering in the mornings will allow foliage to dry off more rapidly during the day and thus reduce spread of diseases.

7 To control mosaic, avoid use of tobacco or wash hands with soap and water before handling plants. Control insects in plant bed and field to prevent mosaic spread.

In the Field

8 Select a well-drained, easily-worked loamy soil. Do not select a soil that had cotton, tobacco, tomatoes, eggplant, peppers, or Irish potatoes last year. Practice crop rotation to control root knot, bacterial spot, and other diseases. Fumigate with EDB or D-D if root knot is severe.

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9 Take a soil sample early to find out lime and fertilizer needs.

10 Be sure that the land is plowed early and deep to insure that trash and other organic matter is well-rotted. Addition of 5-10 tons of stable manure before plowing is very desirable. Plowing under green manure or cover crops early will result in increased yields.

11 Have rows 3½ feet apart in row. This row width helps for later cultivation.

12 Apply the recommended fertilizer in 2 bands, each located 3 inches to the side and 2 to 3 inches below the plant roots. On average soils 800 pounds of 5-1-1 per acre should be used (if soil was not tested). Where banding is impossible, mix the fertilizer thoroughly with the soil before ridging since peppers are very susceptible to fertilizer injury. Side dress 3 times, at two to three-week intervals, with 10 to 15 pounds of nitrogen per side-dressing (such as 65-100 pounds of nitrate of soda, 33-50 pounds of ammonium nitrate). Apply the first side dressing three to four weeks after setting in the field.

13 Set plants in late afternoon or on cloudy days to prevent wilting. Use a transplanting solution that contains a complete fertilizer plus terrachlor to help the plants get an early start and to control southern stem rot.

14 The first cultivation, 10-15 days after setting, should be thorough and fairly clean.

15 The second cultivation may be a week to 10 days later.

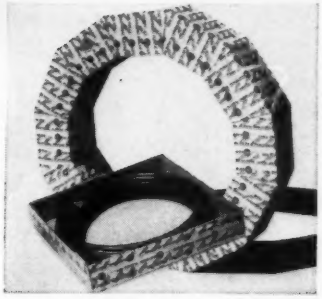
16 The rest of the cultivation should be at weekly intervals, care being taken from this point on not to permit machinery to touch the plants.

17 If bacterial spot appears in the field use a 4-4-50 Bordeaux spray for control.

18 If cercospora leaf spot appears in the field, spray or dust with maneb, zineb, or captan.

19 Harvest, at least once a week, when fruits have reached full size, are firm and crisp, and before they begin to lose their dark green color.

20 Proper picking, packing, and packaging pay premiums.—*A. A. Banadyga and J. C. Wells, North Carolina State College.*



Can I afford to irrigate?

If you've been asking yourself this question, you probably feel, as do most farmers, that *you can't afford not to irrigate.* But perhaps the initial cost of the equipment is holding you back. If so, it's time you investigated USS NATIONAL* Polyethylene Pipe. Not only is this plastic pipe priced to fit your budget, but it's a labor-saving cinch to install . . . a one-man job.

NATIONAL Polyethylene Pipe is flexible—can be run around corners and over obstructions. It's lightweight—can be carried in a roll like hose. And it's tough—resists rot, corrosion, acids, alkalis and most chemicals. Moreover, it retains its toughness and flexibility in extreme temperatures, from -90°F. to +120°F. Available in ½-inch to 6-inch diameters.

NATIONAL Polyethylene Pipe comes in lengths up to 400 feet. It is made of 100% virgin polyethylene compounded with 2¼% carbon black to prevent deterioration from ultraviolet rays. Its smooth inner surface offers low flow resistance, inhibits chemical deposits.

NATIONAL Polyethylene Pipe is also perfect for sprinkler systems and stock watering lines—in fact, all cold water utility lines around the farm. For more details on the many uses of NATIONAL Polyethylene Pipe, write to National Tube Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa. Ask for Bulletin No. 29.

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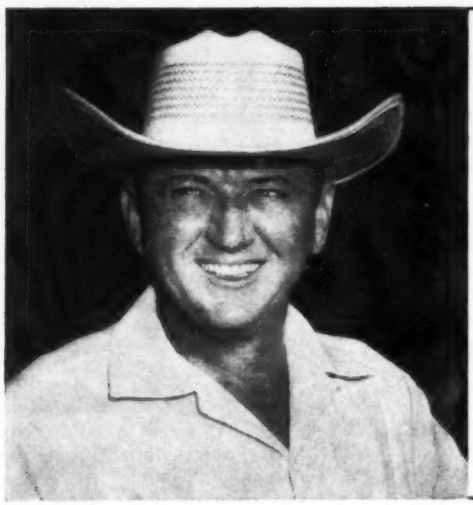
United States Steel Export Company, New York

ORTHO Field Reports:

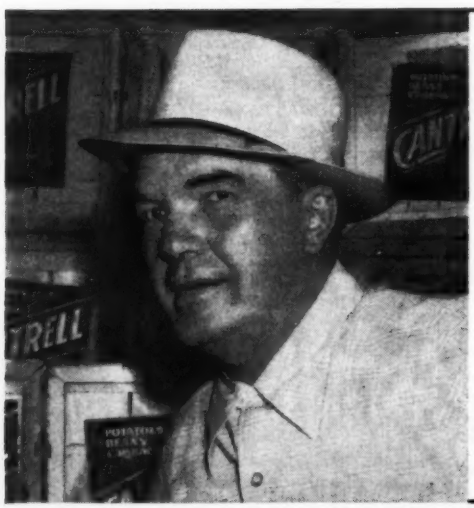
Excellent pest control with ORTHO products

say leading vegetable growers



"We have always had effective controls with ORTHO materials. The freshness of the ORTHO dusts greatly appeal to me. They kill much quicker. When we need pest controls, we need them in a hurry and the ORTHO people are very prompt in delivery."

From a field interview with Mr. Jimmy Morin, Alamo, Texas, vegetable and cotton grower.



"ORTHO products are formulated to our specific needs. I've used in the last four years ORTHO PERSISTOPHOS Dust on my beans and have always harvested high quality beans, free from insect and disease damage."

From a field interview with Mr. Bert Cantrell, Cantrell Produce Co., Hendersonville, North Carolina, whose chief crops are beans, potatoes, and cabbage.

"One of the reasons we grow top quality produce is that we are able to control the infestation of insects and diseases during the growing season. In achieving this excellent control we have followed the advice of the ORTHO Fieldman in the use of ORTHO products. We highly value ORTHO field service and ORTHO products in our operations."

From an interview with Nick, Joe and John Barbato, Smithstown, Long Island, New York, shown above with ORTHO Fieldman Clem Tomaszewski (left).

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Your ORTHO Fieldman knows the particular problems of your area wherever you farm. When you buy the ORTHO program you get the benefit of this technical field service, a half century of research, and all the scientific experience that makes ORTHO America's number one line of agricultural chemicals.

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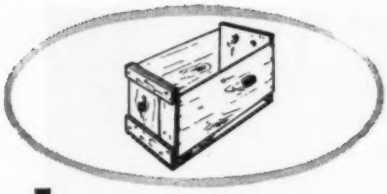

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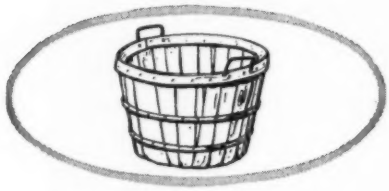

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'Gravel' Farmer MARKETS EARLY

Irrigation - fertilizer program helps him get early profits

By WALTER RUDOLPH

"WITHOUT irrigation, even though rainfall is timely, my crops would not be top quality, and would not be marketable ahead of normal harvesting of vegetables."

This is what August Picardo says about his profitable truck-farming operation along Route 20, west of Erie, Pa. With soil that is "bank gravel" or finer gravel, methodical irrigation and proper fertilization of his 20 acres are essential to good production.

"I can get into my planting and cultivate much faster than other growers," Picardo explains, "and by the same token I must have water sooner than they do. My irrigation system, tied into a Gorman-Rupp pump, makes top production possible," Picardo explains.

Uses Overhead System

He has an overhead spray-irrigating arrangement. Pipe with spray nozzles is mounted in lines several hundred feet long, about 6 feet aboveground. Pipe size is graduated (2, 1½, 1¼, 1 inch), as it stretches from the feeder pipe in the middle, both ways to the pipe ends.

About 5000 feet of such piping is used over nearly 10 acres, which slope gently downhill. The pump is mounted on a skid beside a well at the bottom of the slope. When cold weather sets in, Picardo pulls the pump, skid and all, to a shed for winter storage.

"This is my third year of operation with a pump and well," Picardo said. "Formerly I used township water, and then officials shut my supply off because the expanding township needed the water.

"It cost me 30 cents for 1000 gallons of water; about $200 a year," he continued. "It will take several years to pay for my irrigation setup, but my cost per year will be small.

"The well is only 16 feet deep, in 42-inch concrete pipe, dug out with a clamshell. But the flow is so strong it keeps up with the pump easily and never dries out."

Picardo has each stretch of irrigating pipe valved so that he can irrigate whatever plots he wishes. Even so, he can run his pump top speed, and irrigate eight out of the 14 sections he has piped—pumping uphill, too.

His irrigating spray (Skinner nozzles) is fine, whereas other truck farmers use heavier flows or jets of water. "My light waterfall doesn't tear at plants, allows even moisture absorption, gives me best growth results," says Picardo.

In addition to cabbage, tomatoes, melons, strawberries, and raspberries, Picardo also grows cucumbers, a little corn, beans, and grapes.

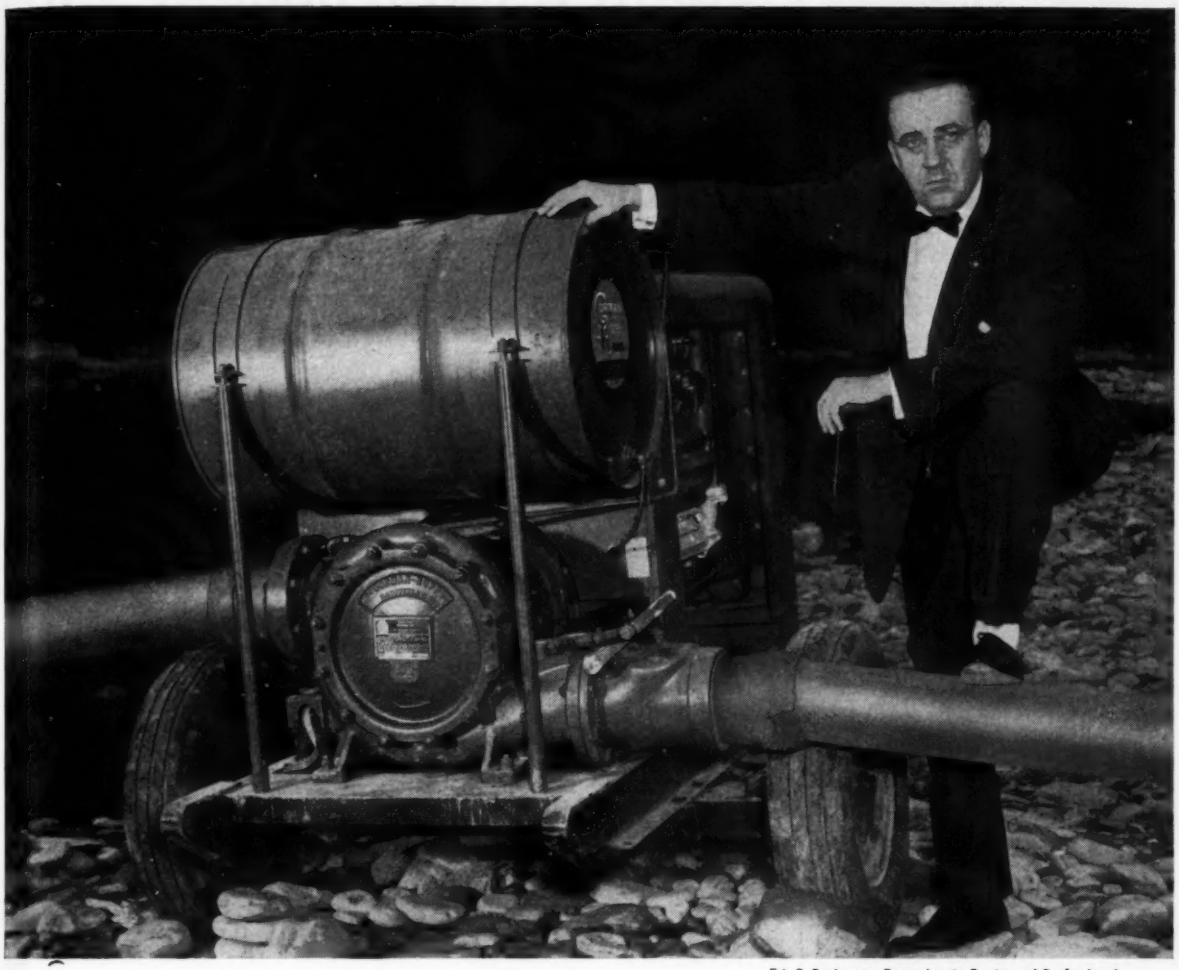
His tomato fertilizer program consists of three applications of 5-10-5 by the first of July. For other vegetables and melons he uses 10-10-10 and 10-20-20 liberally.

Samuel Picardo, eldest son of August, holds tomato plant to show size of fruit on July 2.

Picardo found, too, with his generous fertilizer-irrigation program that wider plant spacings were desirable. Melons were formerly planted 2 x 4 but are now spaced 3 x 5. Tomatoes used to be planted 4 x 4, now are spaced 5 x 5 feet.

"My cabbages run about 10 to a bushel, whereas other farmers require about 18 or 20 heads to fill a bushel," relates Picardo. "And take my cantaloupes—I've had a half-acre planting on which I have picked up to 105 bushels in one day. In a period of three weeks, with constant irrigation, I've had three pickings each week." THE END.

August Picardo starts up Gorman-Rupp pump.



Eric B. Beckeman, Pennsylvania-Registered Professional Engineer and owner of Beckeman Engineering Sales.

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"Applying an inch of water to a single acre requires 27,154 gallons. And, as you know, the total amount of water needed varies with the kind of crop. The average is two inches or approximately 54,000 gallons per acre every ten days from seeding through harvest.

"This imposes the most exacting demand upon the pumping equipment for dependable, trouble-free service. For example, the pump in this system operated six hours, or more, each day for 65 days during a drought. Its delivery rate is 960 gallons per minute at 120 pounds pressure. The application in a tree nursery is unusual, but it definitely shows the pump's importance.

"The proper water supply, we consider the most important factor in engineering an irrigation system. We regularly specify Gorman-Rupp Pumps because of: (1) assurance of dependable and efficient performance, (2) design advantages for the pump user, (3) adequate selection of sizes and driving power for every size of irrigation system."

SYSTEM SUMMARY

(With reference to the pump shown above.)

Crop and acreage: Nursery Stock, 75 acres.

Gorman-Rupp Irrigation Pump: Model 55M-IND56A.

Other equipment: 2,000 feet of main-line 6" aluminum pipe; 4,000 feet of 4" lateral lines, in a duplicate system; 24 sprinklers of 40 gpm in each system. Sprinkler spacing is 80 feet. Pipe spacing, 100 feet.

Date installed: June 15, 1957.

Other details on request.

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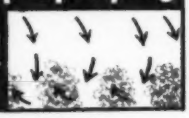

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LABOR RACKETEERING AND THE SECONDARY BOYCOTT

How unions use powerful weapons to bend producers to their demands

By MATT TRIGGS

Matt Triggs, assistant legislative director, American Farm Bureau Federation, made a survey of union practices and how they can and are affecting the fruit and vegetable grower. Following are excerpts from his talk before the AFBF annual meeting in Chicago. —Ed.

Matt Triggs

THE forced collection of money for unloading a truck is a practice which has been going on for many years in certain areas. It declined a little after the enactment of the Hobbs Anti-Racketeering Act, but has picked up again in recent years.

In order that we might know more specifically what is involved, I spent an afternoon on the unloading platform of a chain store warehouse in Philadelphia.

Questioning of truck drivers waiting to be unloaded elicited the following information:

The unloading operation was supervised by a Mr. Foley, representing Teamsters Union Local 107. Mr. Foley is not an employee of the warehouse. Mr. Foley was assisted by two men, neither of whom were employees of the warehouse.

The standard fee is $18.40 per truck, irrespective of size or contents, or whether fully or partially unloaded.

The fee is charged all trucks unloaded, with the exception of Teamster Union drivers from the immediate vicinity (about 30 miles) of Philadelphia and the Camden area. Farmers, farmers' sons, and foremen are not always required to pay the unloading charge (although only after questioning, and submission of identification).

Different Procedures

At each city, however, and even within the same city, the situation is different in regard to fees, and manner of handling. In many instances where unloading is irregular, the imposition of the unloading fee is sporadic.

I asked one driver: "They've almost finished unloading your truck and you haven't paid the fee yet. What would happen if you refused to pay off?"

He said he didn't know, that usually they collected the fee before unloading, but sometimes for drivers who had been there before they collected after unloading. He said maybe somebody would "meet me in a dark alley sometime". He also said that if he didn't pay the fee he was sure he'd never be permitted to unload at that unloading platform again.

One driver said he got mad one day and tried to unload himself. However, nobody would take the pallets away—so he had to hunt up Mr. Foley and pay him the unloading fee.

In one instance a half truckload, about 300 boxes, was being unloaded. It took one man one hour and eight minutes to unload. Upon the completion of this unloading the truck driver paid Mr. Foley $18.40.

We know this practice occurs in a greater or lesser degree in New York City, Newark, Philadelphia, Akron, Boston, Pittsburgh, Jersey City, Youngstown, Columbus, Cincinnati, Cleveland, Albany, Providence, Wheeling, Wilkes-Barre, Scranton, and Johnstown. It probably occurs in many other cities about which we have no specific information.

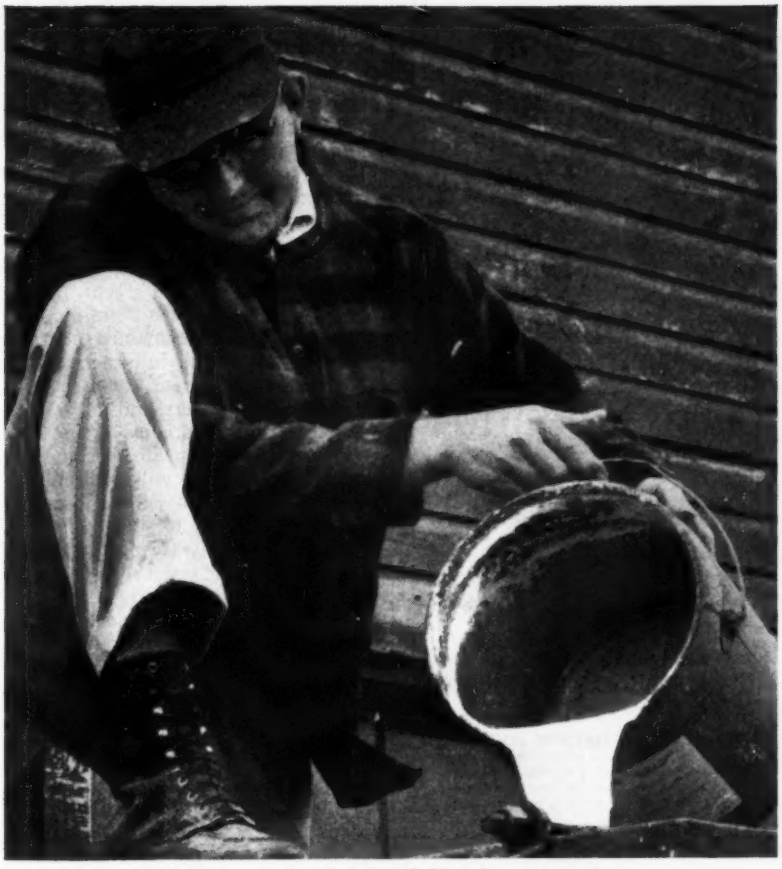
The Justice Department has advised us that the collection of unloading fees does not constitute a violation of the Hobbs Anti-Racketeering Act unless the element or fear of violence is present. While this element may be present in particular instances it is not ordinarily present. All that usually happens is that you don't get unloaded.

The Internal Revenue Service has issued a ruling arising out of an Indianapolis case to the effect that the trucker is the employer and therefore responsible for income tax withholding. If the trucker (or the shipper if the truck operator is an employee of the shipper) is responsible for withholding income tax, he is presumably also responsible for social security deductions, payments of unemployment insurance taxes, coverage of such "workers" by workman's compensation insurance, compliance with state and federal minimum wage and hour regulations.

This is preposterous. This is the equivalent of requiring a person held up in a dark alley to assume the responsibility as an employer of the holdup man.

The chain stores and other wholesale receivers are the instruments,

The new insecticides require safe handling



Unlike many phosphates, malathion does not require use of respirator or special protective clothing.

DURING THE last ten years, many common insects have become harder to kill... in some cases resistant to standard insecticides. To combat these tough strains, new and more powerful insecticides have been developed. Without these chemicals, crop losses would have been enormous.

Many of these insecticides have greater toxicity for man and animals as well as for insects. This is particularly true of the phosphates, with one important exception . . . malathion. This versatile phosphate kills a wide range of insects attacking fruits and vegetables, *and offers growers safety in use.*

When handling most phosphates, respirators and protective clothing are a must. Malathion eliminates the need for both, yet is effective against a total of 105 different insects, including strains resistant to the chlorinated insecticides.

Recent government acceptance of malathion for application directly on livestock, where safety is so important, dramatically confirms this safety feature. The U.S. Public Health Service reports, "... the toxicities of malathion (oral and through the skin) are less than those of DDT." And the USDA calls it, "... one of the safest insecticides to handle."

All insecticides should be handled safely ... malathion makes it easy.

Avoid Residue Problems

On many crops malathion can be used up to 72 hours from harvest ... on most others, up to 7 days without danger of exceeding tolerances established by the Miller Law.

Safety to Crops

Many states *specify* malathion in their insect control recommendations. It gives growers all the advantages of a phosphate, yet offers a wide margin of safety to fruit and foliage of sensitive crops.

For a free, Grower's Handbook listing malathion's uses, rates, timing, etc. write: American Cyanamid Company, Insecticide Department AV3, New York 20, N. Y.

WHEN YOU USE ANY INSECTICIDE . . .

1. Read labels, product literature carefully. Mix and apply *only* as directed.
2. *When required,* use respirator and protective clothing.
3. Make sure all persons handling insecticides wash thoroughly, particularly before eating.
4. Store insecticides in a safe place . . . out of the reach of children and pets. Destroy empty containers.
5. Know poisoning symptoms and antidotes for the insecticide you are using. If symptoms occur, call doctor immediately.

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THE POWELL CAM ROLLER SYSTEM:
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reluctant and perhaps helpless instruments, but nevertheless the instruments, through which the Teamsters Union accomplishes its objective.

We need revision of the Hobbs Anti-Racketeering Act to prohibit this practice. We also need, should have, and I hope will have, the cooperation of chain stores and other wholesale receivers in terminating this practice.

Secondary Boycotts

The great grand-daddy of racketeering practices are secondary boycotts. I classify secondary boycotts as rackets, because in practice they are commonly used for the purpose of compelling employers and employees, who are not dissatisfied with their present relationship, to become involved against their will with an outside group and to pay substantial amounts of money to such group.

There are many forms of secondary boycotts. The one I'd like to mention first is the hot cargo provision that is commonly incorporated into contracts between the Teamsters Union and the truck common carriers. Under this clause the union may refuse in its discretion to handle a shipment from a particular plant or connecting carrier.

Needless to say, the exercise by the Teamsters Union of the authority delegated to them in such contracts is a powerful economic weapon that few employers can resist. The power to deny truck transportation service has been widely used as a means of organizing any establishment dependent upon truck service, irrespective of the wishes of the workers in such establishment.

The hot cargo situation has been subject to consideration by N.L.R.B., which has held that a hot cargo clause is prima-facie evidence of an illegal secondary boycott (119 N.L.R.B. 53). This decision will no doubt go to the Supreme Court.

If the N.L.R.B. decision is upheld and if I.C.C. rules that a hot cargo clause is inconsistent with the responsibilities of a common carrier, it spells the end of hot cargo practices by common carriers.

Another practice widely followed in the Pacific Coast states and spreading east is what might be called "hot merchandise" clauses of labor-management contracts between retail food store unions and employers. In the Los Angeles area, for example, such contracts contain specific provision that the union may, at its discretion, blacklist a product from a particular source, and if so blacklisted, the employees of the company may refuse to handle the product without being subject to company discipline.

Thus the apple processing and shipping industry in the Sebastopol area of California, faced with an organized boycott in the markets, capitulated and signed up with the union even though the majority of workers in most of the plants had rejected the union in an N.L.R.B. election.

And this past summer an apple processor at Watsonville, Calif., whose workers rejected unionism by a 16 to 1 vote in an N.L.R.B. election, nevertheless lost his markets.

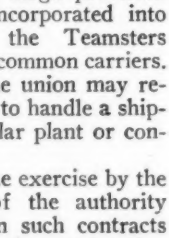
Farmers are extremely vulnerable to the organization of farm workers. In some areas of the United States where unions have organized truck transportation as well as processing and handling establishments, they have the power to compel the organization of farm workers by the use of boycotts.

Farmers' Defense

The defenses of farmers against such efforts are not as good as they should be, but they have some defenses.

The first line of defense is the processor or handler. In the interest of his own business and his freedom

A Report From Charlie Sanderson



SHOWN here is Charles W. Sanderson, prominent vegetable producer and general chairman of the coming 50th anniversary convention of Vegetable Growers Association of America.

Charlie says that market gardeners; truck gardeners; greenhouse growers; growers on muck and mineral soils; contract growers; tomato, potato, melon, and asparagus growers, to name a few, all will find much of interest and help at the big anniversary celebration scheduled for next December.

Charlie has attended vegetable meetings for many years and has found that much of his success as a vegetable producer can be traced to what he learned from others. He says that this meeting will be the granddaddy of all meetings and the best ever. Not only will vegetable and potato producers pick up specific hints, but also a background of information to help answer such questions as what variety to plant, when to spray, how to get more of the consumer dollar, how and when to fertilize, etc.

To top it all off, there will be a big trade and machinery show where first-hand observations can be made.

The meeting is December 8 through 12, 1958, at Cleveland (Ohio) Public Auditorium. The first meeting of the national vegetable association was held in Cleveland when some 80 vegetable growers from various sections of the country met and formed the Greenhouse Vegetable Growers and Market Gardeners Association of America. This organization later became the Vegetable Growers Association of America.

One last thought: Be sure to mark the dates, December 8 through 12, on your calendar. This is going to be the biggest vegetable meeting of the century.

to manage his business, he should, if he can, insist on a provision in his contract with the union that will prevent them from boycotting the receipt of goods for which he has contracted. Some contracts presumably so provide—but probably most of them are silent in this respect.

The second line of defense is the immediate filing, and nobody can do it except the farmers involved, of a secondary boycott complaint with N.L.R.B., together with a request for an injunction. Under the N.L.R. Act this is a secondary boycott (because the workers in the plant do not have a dispute with their employers) and the N.L.R.B. is required to go to court and ask for an injunction against a secondary boycott as soon as it is determined that such exists. This remedy is not as good as it could be, because perishable commodities get ripe faster than the procedures of N.L.R.B. operate.

The third and perhaps most effective line of defense against a secondary boycott is a damage suit against the union by those farmers involved. Such action should be taken quickly. Although the suit is not likely to be heard quickly, the mere filing of a suit and the large potential damages being incurred by the union is a substantial deterrent to continued boycott activity. The Watsonville apple processor, to whom I have referred, filed a suit for a half million dollars against the Teamsters Union. The secondary boycott was immediately lifted.

And obviously, in dealing with any aspect of this problem, we immediately get involved in some tough and controversial issues. Unions have attained their monopoly power—and I think this is the word which fairly describes the situation — by certain public policies which were adopted during a period in which it was thought that labor unions could do no wrong.

Thus, there is no prohibition in law against industry-wide bargaining. There is no prohibition in law against anti-trust practices and restraints of trade undertaken by labor unions. The Taft-Hartley Act remedies are inadequate to really get at the abusive exercise of labor union power. The Hobbs Anti-Racketeering Act is either ineffective or inapplicable.

Compulsory unionism, permitted by law, is the fountainhead of abuse of power by labor unions. Union leaders could not disregard the views of their members, could not neglect democratic forms and procedures, could not engage in political activities, could not recklessly use other peoples' money, if their power were checked by the right of the individual to resign his membership. THE END.

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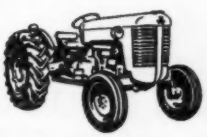

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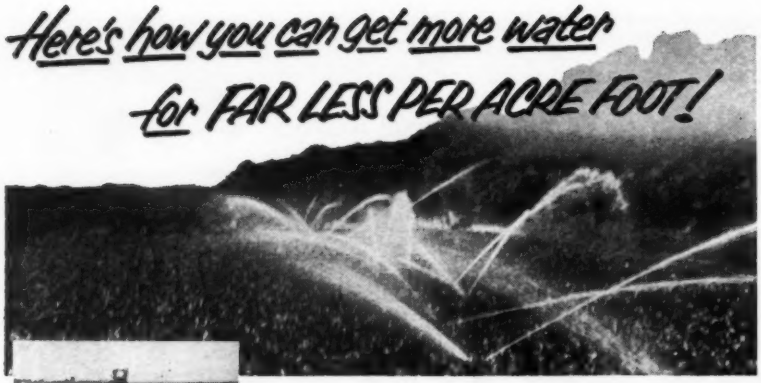

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County_____ State_____

Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a three-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

ACADIAN SWEETPOTATO

Where can I buy seed of the Acadian sweetpotato developed at Louisiana Agricultural Experiment Station?—*Tennessee.*

From Bienville Plant Farm, Box 94, Arcadia, La.; L.S.U. Sweetpotato Research Center, Chase, La.; Brown McLemore, Jr., Gilbert, La.; Henry F. Smith, Rt. 2, Box 134, Arcadia, La.; and Watson & Tillman, Wisner, La.

PLASTIC COVERS

I understand that commercial tomato growers in Mississippi are protecting their plants in the field with a cellophane-type covering. Could you supply details?—*Mississippi.*

Polyethylene is being used on tomato plantings only on an experimental basis, according to Chesley Hines, extension vegetable specialist, Mississippi State College. The polyethylene is placed lengthwise on the row or plants and is held in place on either side of the row by covering the edges with soil. The plastic material is left on the plants only a few weeks or until the plants are approximately 18 inches tall.

HONEYDEW PROBLEM

I can grow large and good-appearing honeydew melons but they ripen with a bitter flavor. What can I do about this?—*Arkansas.*

According to Earl J. Allen, extension horticulturist at the University of Arkansas, the frequent heavy rainfalls which occur in Arkansas are the cause of the poor flavor. Apparently the honeydew and also cantaloupe need to mature with a limited supply of moisture. When there is too much moisture during the ripening period, the melons fail to develop the necessary sugar content for satisfactory flavor.

BANJO OR STOKESCROSS NO. 6

Two years ago I obtained from Francis C. Stokes Co. tomato seed named Banjo. I was much impressed with this tomato, especially its quality. Now I don't find this seed listed. However, there is a new seed called Stokescross No. 6. Could these be the same?—*New Jersey.*

Yes, Banjo Hybrid was the name originally used for the tomato, Stokescross No. 6. Seed and plants are available from Francis C. Stokes Co., Vincentown, N. J.

POLYETHYLENE TUBING

I would like to know where I can get plastic tubing for heating greenhouses as described in the October number.—*Tennessee.*

From Gering Products, Inc., North 7th & Monroe Sts., Kenilworth, N. J.; Poly Plastic Products Co., East 12th St., Patterson, N. J.; Clopay Corp., Clopay Square, Cincinnati, Ohio; Koppers Co., Inc., 4001 W. 60th St., Chicago, Ill.; Visking Co., P. O. Box 1410, Terre Haute, Ind.; Koppers Co., Inc., 5600 West Arbor Vitae St., Los Angeles 45, Calif.; and Interstate Plastic Extrusion Corp., 2822 Benedict St., Los Angeles, Calif.

CORN PLANTER WANTED

Who makes Iron Age equipment? I am interested in a corn planter.—*Ohio.*

Iron Age equipment is manufactured by the Oliver Corp., 400 W. Madison, Chicago, Ill. We are also sending our reader the list of corn planter manufacturers from our July Buyer's Guide issue.

Magnesium Deficient Cabbage

Magnesium Deficient Tomato

before it's

TOO LATE for TOP PROFITS!

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in your premium mixed fertilizer

With 90% of many vegetable-growing areas reported as magnesium-deficient, crop losses like those shown above may be only a heavy rainfall away. *Before* magnesium deficiency can strike—*before* it's TOO LATE for TOP PROFITS—insure your vegetables an adequate supply of magnesium with premium mixed fertilizer containing Sul-Po-Mag®. Supply fast-acting, readily-available, water-soluble magnesium and premium sulphate of potash with Sul-Po-Mag, also called SPM. It's in granular form to lessen leaching. Take no chances on magnesium deficiency losses. Ask your dealer for premium mixed fertilizer with Sul-Po-Mag.

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Water-Soluble Double Sulphate of Potash-Magnesia
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WATERMELONS . . . His Best Crop

Alabama grower follows good cultural practices for above-average yields

DOWN in southern Alabama near Foley, Herbert Lunsford grows some of the finest watermelons to be found anywhere. He likes to grow them, probably because they have been one of his most profitable crops.

His best returns in any one year have run well over $700 per acre. Three years ago he had one 40-acre field return $13,000. Many factors vary yields and returns from year to year.

Lunsford grew the Florida Giant or Black Diamond for a number of years but now has practically all of his 125 acres planted to Charleston Gray. The latter variety is more resistant to wilt and anthracnose, the two big watermelon disease problems in the South. It is also of good quality and ships well.

Black Diamond ranges up to 50 pounds per melon, while Charleston Gray averages around 25 to 30 pounds. Lunsford finds the smaller size advantageous because markets are demanding smaller melons than formerly.

Uses New Land

Another big factor in controlling diseases in melons is to plant on new land each year. Lunsford has plenty of land available. He clears some 125 acres each year and plants to watermelons for the first crop. Land costs are not as high as in some areas farther north. Land is priced about $75 per acre. It costs around $25 to clear and prepare it for planting.

After clearing, the land is disked up fine with a heavy disk and leveled for planting. Rows are marked off, 10 feet apart, and seed planted by hand in hills every 10 feet in the row. Usually from four to six seeds are dropped per hill and later, when plants are growing good, he thins to a single plant per hill. This means about 400 hills per acre.

Just before planting, Lunsford puts 1400 pounds of 4-10-7 or 4-12-12 per acre under the marked row with a potato planter. After plants are growing well and just starting to run, he side-dresses with 400 pounds 6-8-8 per acre. New land with plenty of fertilizer means more well developed melons per acre.

Aims for Early Melons

First plantings are usually made between March 1 and 4, with a risk of a frost wiping them out.

Last year Lunsford tried 1000 plant protectors over the melon hills in his March 5 plantting. Only those plants covered by the caps weathered a heavy frost just after they were up and came on to mature a fine early crop of melons.

The next planting, two weeks later, was late enough to escape frost damage, but also late enough at harvest time to escape the best melon prices.

Herbert Lunsford and a sample of Charleston Gray watermelon, first plantings of which he usually makes between March 1 and 4. Because of risk of frost wiping out the early crop, Lunsford plans extensive use of plant protectors.

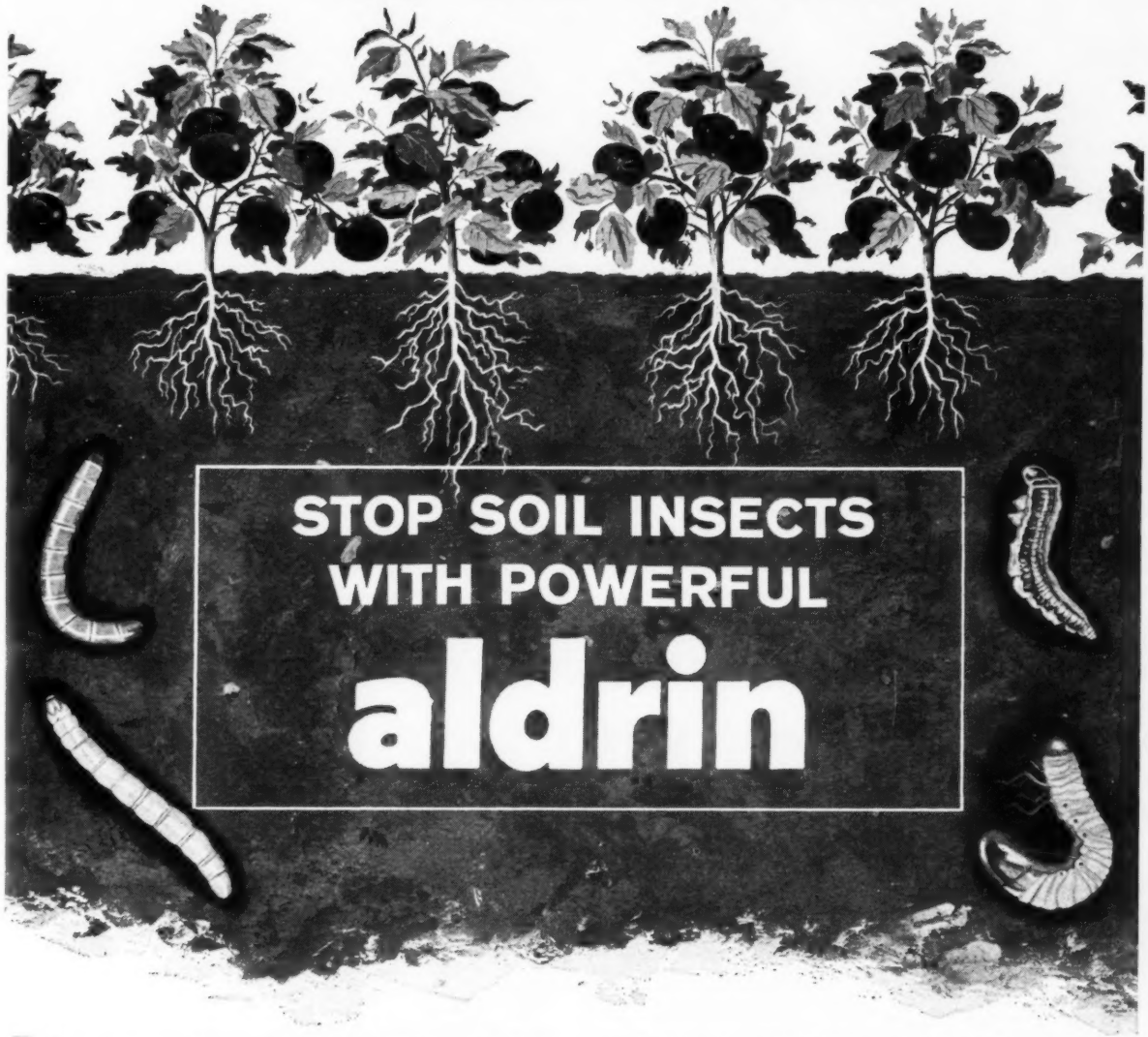
Now Lunsford is planning extensive use of plant covers. The cost of caps is not excessive, since two men put the 1000 caps over the hills in a day and a half at a total cost of about 3 cents each.

On new land the weed problem is slight. Lunsford gives watermelons very few cultivations or hoeings. After melons are set on he thins so as to leave three or four well-shaped fruits per vine. It is essential to pull off all misshaped melons.

Diseases are almost nonexistent on new land so Lunsford has a minor spray program. Normally three applications of nicotine sulfate are applied while plants are young to keep aphids under control. Should any foliage diseases show up later he applies Dithane to keep them under control.

Harvest extends from June 15 to July 4 and melons are cut with a 2-inch piece of stem remaining on the melon. This helps prevent steam-end rot, a transit disease. Practically all melons now move out by truck, with a limited amount by rail. Yields on the Lunsford farm have averaged between 12 and 14 tons per acre for a number of years. THE END.

Protect root systems NOW for bigger yields at harvest!



Each season, soil insects downgrade millions of dollars worth of vegetables and small fruit. These destructive pests attack and destroy seeds and growing root systems . . . preventing vital soil nourishment from reaching growing plants. That's why it will pay you to knock out soil insects with powerful aldrin.

Aldrin kills seed corn maggots, wireworms, rootworms, white grubs, tuber flea beetles and other root-destroying insects. It effectively protects important economic crops which include tomatoes, onions, potatoes, corn and small fruit. And it's economical, too. Just one preplant treatment with powerful aldrin lasts an entire season.

Aldrin is easy to use. You can apply it as granules, spray or dust, or purchase it in a fertilizer mix. Whichever method you choose, you get dependable protection against soil insects with just small amounts of actual aldrin per acre.

This season, start your plants on the way to a bigger, better, more profitable harvest. Beat soil insects with aldrin. It is available under well-known brand names from your insecticide dealer. *See him today.*

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AGRICULTURAL CHEMICAL SALES DIVISION
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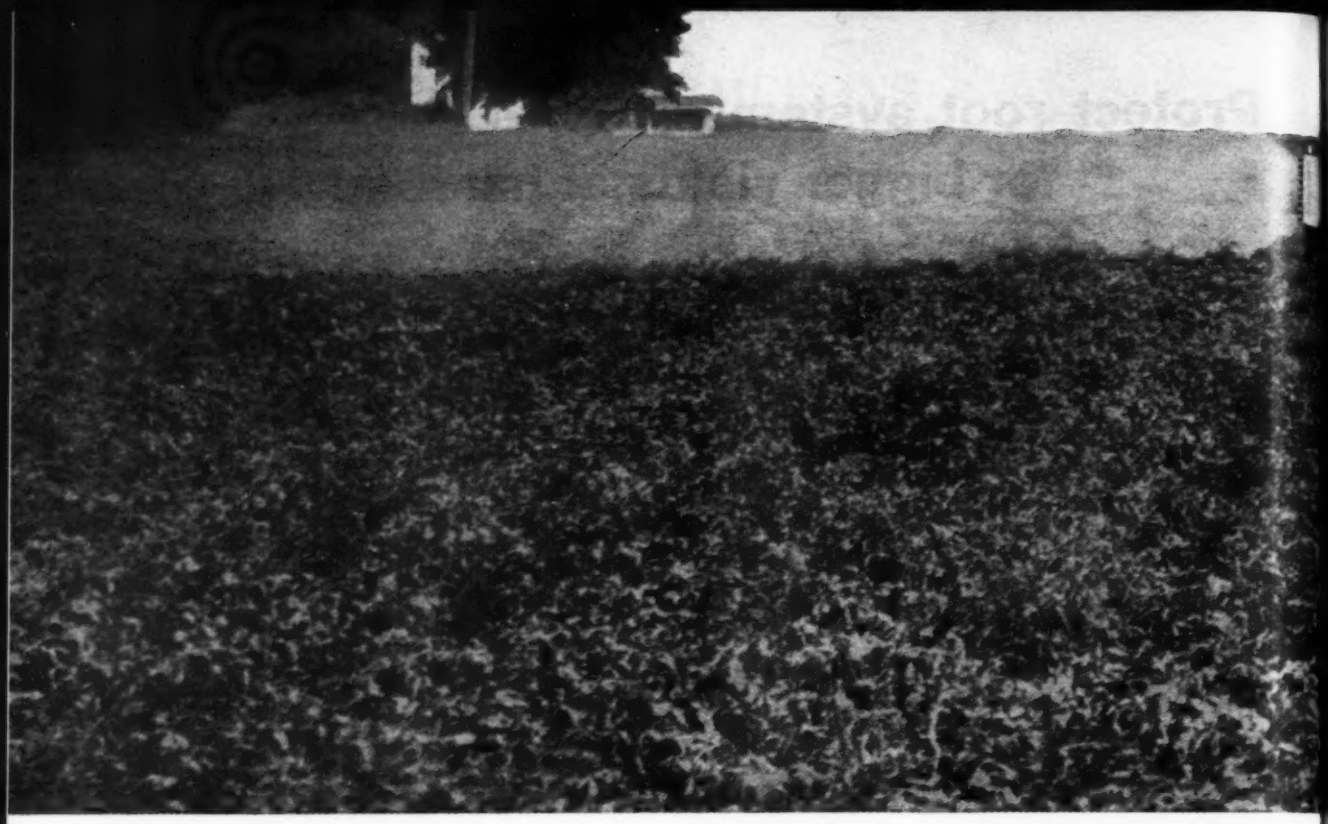
SHELL



"With a Myers Air Sprayer, we get c mer blight control with two-thirds the m rial a one-fourth the water we used befor

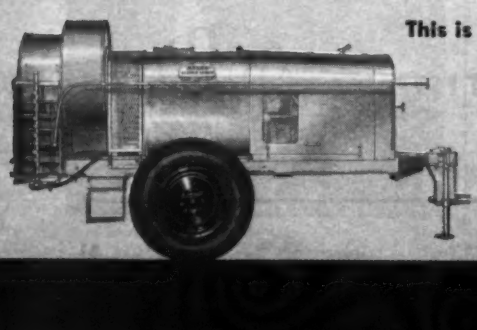
"Blight damage used to cost us at least 10% of our potato yield every season. But since we began using a Myers Air Sprayer, we can stop the disease before it gets a chance to get started".

According to Mr. Herr, "When weather conditions are right, blight can get a foothold overnight, so it is vitally important to apply a protective spray cover fast. With the Myers unit we can cover our 80 acres of potatoes in about six hours. With the old boom sprayer, it took about 24 hours . . . long enough for blight to do some damage".

He goes on to say, "In addition to doing the job faster, the Myers unit produces a fine spray that dries immediately covering plants with a thorough, even cover of spray materials. There's none of the wasteful run-off you get with dilute units".

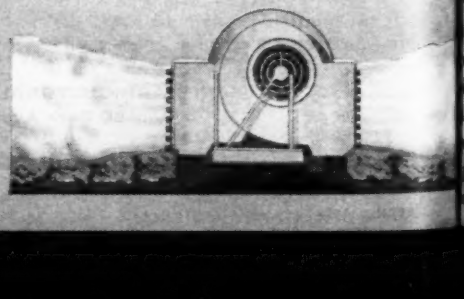
By preventing run-off, Mr. Herr says he saved $600 in spray materials alone the first year he used his Myers Concentrate Sprayer. And by cutting water consumption 75% his spray schedule requires fewer tank-refilling stops, materially reducing man-hours.

Myers Concentrate Air Sprayers are helping growers everywhere produce bigger, better yields and cut production costs. Call your nearest Myers Sprayer dealer and arrange a demonstration in your own fields.



This is the sprayer used by Mr. Herr—

Two-way discharge, 22,000 cubic feet of air per minute each side, 60 MPH. High pressure, 20 GPM Myers piston pump. Special Myers coating protects tank from rust and corrosion. Positive controls easily reached



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As It Looks To Me

By JOHN CAREW
Michigan State University

THE game of onion poker is getting out of hand. Onion growers are gamblers by nature, but they hate losing their chips to a gang of professionals who play different rules.

Future trading in onions on the Chicago Mercantile Exchange is primarily a gambling or speculative activity. About 90% of the players in this game, where cars of onions are the bet, are not growers. The producers are primarily kibitzers eagerly watching the "board" to see how low the price will drop.

The National Onion Association would like to "raid the joint." Under the driving leadership of Secretary Jack Rose they are seeking to have trading in onion futures outlawed. Their arguments are as follows:

1) Onions cannot be compared with grains or cotton, which are successfully traded on the futures market. They are more perishable, produced in much smaller volume, and, therefore, far more readily manipulated. Professional speculators have been able to induce marked price fluctuations.

Price Below Cost

According to Rose, "In the spring of 1956, the futures price on onions was driven down to 10 cents per bag, even though the new empty bags alone cost 20 cents. In February, 1957, the futures market was broken from $2.20 per bag to $ .87 in a period of three weeks' time, even with available stocks of onions on hand hardly adequate to meet consumer needs until the Texas crop came in. As this futures market is depressed, the cash market for the growers' onions is likewise broken. In the February, 1957, break, cash onion markets broke $1.00 to $1.25 per bag for no reason other than speculative activities on the futures board."

2) Unlike other agricultural commodities, few people actually sell or buy onions on the futures market. In 1956, only 615 carloads were delivered on the market out of 50,000 produced. Trading on the exchange is essentially a paper transaction. This in itself is not harmful. But when a low "paper" price depresses the cash market price, non-speculating growers are hurt.

Advocates of onion futures trading maintain there should be no curb on free trading of any commodity. Their opposition has been well planned and effective.

All but a handful of onion growers are behind the fight to outlaw futures trading. In this interesting struggle between farmers and speculators, these men do not expect their fellow vegetable growers to get into the fight. But they would appreciate a few words of encouragement—especially in the presence of local congressmen.

Asparagus Information

ASPARAGUS growers look to the University of Delaware for reliable information. E. P. Brasher and Elisha Rahn have made outstanding contributions to our knowledge of fertilizing and weed control methods.

Brasher's elaborate experiments have repeatedly shown the values of a 1-2-3 ratio fertilizer, ridge culture, and boron. Supported by data from his 12-year-old plantings, he recommends:

1) Bring the soil pH up to 6.5 and turn under a good cover crop before setting roots.

2) Set roots close together, at least 10 to 12 inches.

3) Apply approximately 1600 pounds of a 5-10-15 (or its equivalent) annually. Band over the row if equipment is available. Sidedress with muriate of potash in early August. Use nitrogen only if a deficiency is apparent.

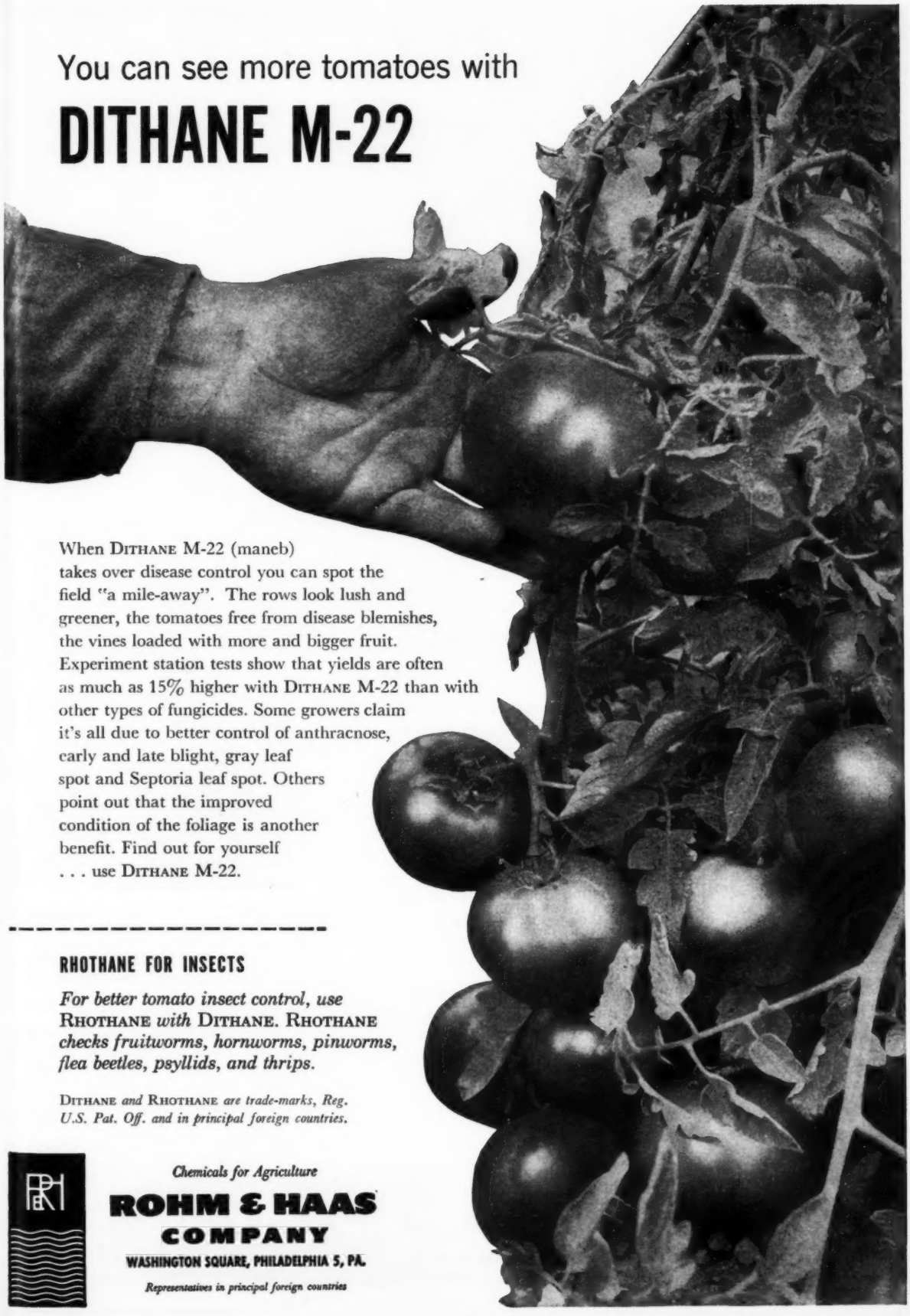
4) Apply 20 pounds of borax to each acre once every third year.

5) In the spring when the first spears appear above ground, throw a ridge approximately 6 inches high over the center of the rows. Retain this ridge until the end of the cutting season.

Elisha Rahn pioneered the research with monuron (formerly CMU and sold commonly as Karmex). His long term plots demonstrated the absence of harmful residues from this effective and widely used weed killer. Recently he has demonstrated the value of Dalapon for quackgrass control and this material is now approved for use on asparagus beds. THE END.

You can see more tomatoes with

DITHANE M-22



When DITHANE M-22 (maneb) takes over disease control you can spot the field "a mile-away". The rows look lush and greener, the tomatoes free from disease blemishes, the vines loaded with more and bigger fruit. Experiment station tests show that yields are often as much as 15% higher with DITHANE M-22 than with other types of fungicides. Some growers claim it's all due to better control of anthracnose, early and late blight, gray leaf spot and Septoria leaf spot. Others point out that the improved condition of the foliage is another benefit. Find out for yourself . . . use DITHANE M-22.

RHOTHANE FOR INSECTS

For better tomato insect control, use RHOTHANE *with* DITHANE. RHOTHANE *checks fruitworms, hornworms, pinworms, flea beetles, psyllids, and thrips.*

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TRITHION®

controls wide range of destructive insects and mites

New Long-Lasting Insecticide-Miticide

Growers know that Trithion controls aphids, mites, scale insects, leaf hoppers and a host of other plant pests. It also does a terrific job on certain caterpillars and beetles.

You'll like Trithion's low-cost protection, too. Fact is one or two applications may last you all season. That's because Trithion not only has long-lasting residual action—but it also destroys mite eggs.

Whatever your special requirements may be, you'll find a Trithion formulation for every need. Ask your local dealer for:

TRITHION DUSTS—Formulations which contain 2% or 3% Trithion. Stable and compatible with most other insecticides or fungicides.

TRITHION 4 FLOWABLE—A water-base emulsion with 4 pounds of Trithion per gallon. Combines the low plant-injury advantage of wettable powder formulations with the ease of handling and good spreading qualities of liquid concentrates.

TRITHION 25% WETTABLE POWDER—A superior wettable powder formulation for use on orchard and field crops.

TRITHION 4 EK—A special formulation, for use *only* in oil sprays, designed to prevent alteration of the depositing characteristics of any type of spray oils.

For low-cost crop protection all season long, insist upon dependable Trithion. It pays for itself many times over in better crops, *bigger* profits!

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PLANT GROWING FOR PROFIT

Small growers find good income in selling to home gardeners

THE business of growing vegetable plants for home gardeners has gained considerable importance. People seem more willing today than in the past to buy plants instead of raising them themselves, and they are willing to pay good prices. In Ithaca, N. Y., plants of moderate quality sell at 65 cents a dozen in little wooden boxes about 6 x 12 inches.

Raising plants for sale is a fine income-producer for small growers who expand their operations beyond the needs for their own use. It brings early season income when cash outgo is high and crop sales have not yet begun.

700,000 Plants

Francis H. Myers, a retired railroad man, of Avis, Pa., grows about 700,000 plants each year. He has

After his retirement, Francis H. Myers, Avis, Pa., built up quite a profitable business of growing vegetable plants for home gardeners.

two greenhouses, one of which has no artificial heat. One house is 22 x 50 feet, the other, 20 x 50 feet, and he has a few sash in addition.

He makes quite a business selling plants of Big Boy and Keystate tomato varieties at $2.00 a dozen in 3-inch bands. Rutgers, 2 inches apart, 48 in a box, sell at $1.00 a box —and cabbage plants command the same price. He includes peppers and a number of kinds of flower plants in his line.—*Paul Work, Cornell University, Ithaca, N. Y.*

Plastic greenhouse plans, with construction details, are available from AMERICAN VEGETABLE GROWER, Willoughby, Ohio, for 50 cents.

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line is only

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Fasten it

Stapling cuts costs 60% —beats wire twisting 3 to 1

The best bag sealing operator on your produce line is only as fast as the closure method you use.

To give you an idea how much difference the method can make, look at the figures for this New England packer's plant.

The woman on the right is a whiz at twisting wire closures. Yet a woman with a Bostitch foot-operated stapler beat her, *three* to *one*.

Since switching to Bostitch, this company has experienced an over-all fastening saving of 60%. And Bostitch-sealed packages are better looking.

A Bostitch Economy Man will be glad to explore cost-cutting opportunities with you in your plant. There is no cost or obligation.

Look up Bostitch in your phone directory, or send the coupon below.

Fasten it better and faster with

BOSTITCH®
STAPLERS AND STAPLES

Bostitch, 424 Briggs Drive, East Greenwich, Rhode Island

Please send information about how I can save money fastening with staples.

My plant packages _____

We now seal packages with _____

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Address _____

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Swift's Plant Foods trigger new Yield Energy

Vegetable cropland takes on new power to produce when it's fed with Swift's Plant Foods. The extra growth elements in these Specialized Crop Makers *trigger new yield energy from the soil* . . . actually make each acre of land worth more to you.

Swift's Plant Foods are made by the exclusive FLO-FUSION process which packs each particle with fertility to assure balanced feeding of your crop. The plant food elements are chemically-hitched so they can't shake out or separate.

There is a Swift's Plant Food that is just right for your crop. Your Swift Agent or Dealer will be glad to help you plan a soil fertility program using **Vigoro Commercial Grower, Brimm, Blenn** or **Red Steer.** Contact your nearest Swift office.

Swift 103RD YEAR — AGRICULTURAL CHEMICAL DIVISION • CHICAGO 9, ILLINOIS

To Serve Your Farm and Family Better

1958 OFFICERS IN OHIO

Officers elected for 1958 at annual meeting of Ohio Vegetable and Potato Growers Association are, left to right, standing: Clinton Seitz, Cincinnati, director; C. A. Judy, Jr., Newcomerstown, vice-president, potato section; Kenneth Zellers, Hartville, vice-president, truck crop section; Vernon Kraushaar, Cleveland, vice-president, greenhouse section; E. C. Wittmeyer, Columbus, secretary. Seated, left to right: Leo Gaffin, Columbus, treasurer; Jack Basquin, Big Prairie, first vice-president; Leonard Bettinger, Swanton, president. A. W. Gerhart, North Ridgeville, director, and Francis Huck, Marietta, newly-elected director, are not pictured.

STATE NEWS

(*Continued from page* 14)

reports John C. Lingle, associate professor of vegetable crops, University of California, Davis.

Lingle also reports that a combination application of 20 pounds nitrogen and 25 pounds phosphorus per acre at planting followed by 60 pounds nitrogen as a side dressing at thinning time resulted in a 15% production increase over that obtained when both fertilizers were applied as side dressing at the rate of 120 pounds each.—*Neale Leslie.*

Co-ops Are Vital

NEW YORK—"Co-operatives rather than government programs are the solution to farm problems," Joseph S. Vandemark, assistant director, American Farm Bureau Federation, told members of New York Canning Crop Growers Co-operative. The occasion was the group's recent 12th annual meeting in Batavia.

Investments by growers in buying and marketing services amount to but 2% of the value of farm production, Vandemark said, and these activities must be expanded if food producers are to gain control over economic forces that determine farm income.

NEW CUCUMBER GRADE

An additional grade for cucumbers, U. S. Extra No. 1, a combination of the present U. S. Fancy and U. S. No. 1 grades, has been provided by a recent USDA revision of standards. The new grade requires that at least 50% of the cucumbers in the lot shall meet the requirements of the U. S. Fancy grade, and the remainder, the requirements of U. S. No. 1.

David Call, Cornell University graduate student, in reporting on his study of the co-op, stated that 83% of the members surveyed rate its performance as good and excellent. They list as benefits higher contract prices, supply and market information, better contract terms other than prices, and improved grower-processor relations.

Charles H. Riley, Jr., director of wholesale operation of G. L. F. Exchange, cited the rapid changes in the food industry. Concentration of buying power into fewer units requires organization by growers, he pointed out.

Roy Forsyth, of Byron, was chosen by the board of directors to serve as the 1958 president. Harold Shepard, of Elba; Donald Nesbitt, of Albion; and Nelson

fmc Check-Way Baggers

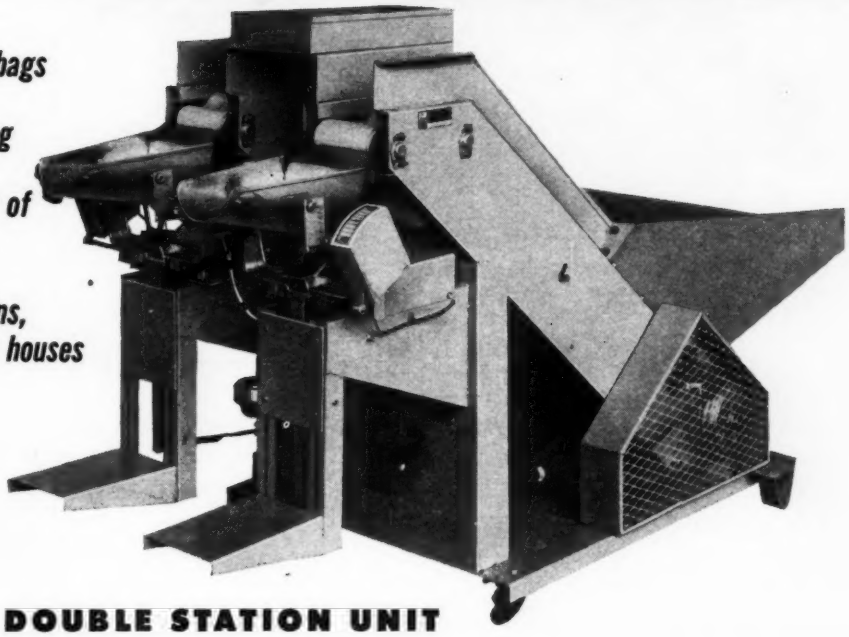
Automatically weighs as it bags

Fills mesh, paper or poly bag

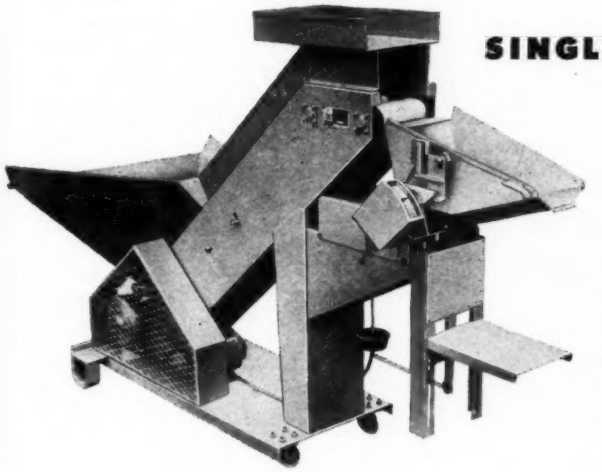
One operator does the work of three manual packers

Easily moved, ideal for chains, supermarkets, wholesale houses

Bags 5 to 8 five-pound bags per minute— 4 to 8 ten-pound bags—3 to 6 fifteen-pound bags



DOUBLE STATION UNIT



SINGLE STATION UNIT

Here is a compact precision built bagger for all of your prepackaging needs. Both the single and double station units are completely automatic. Micro-switch controls stop Bagger when preset weight is reached. Operator tilts hopper to fill bags. Hopper automatically refills to correct weight when released. With the double station bagger, one hopper is always filled while the other is being emptied. Bagger handles most all types of produce. A special filling head is available for citrus. Write now for literature and price.

Putting Ideas to Work

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Florida Division
General Sales Office—LAKELAND, FLORIDA
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P. O. BOX 1718, LAKELAND, FLORIDA

Gentlemen: Please send me details on FMC Baggers.

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Company_____

Address_____ RFD No._____

City_____ State_____

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The BUFFALO-TURBINE, Model CPs

Sprayer . . . Duster, with power take-off shaft

Economical to Purchase and Operate:

Low in first cost. Low maintenance cost. Attaches to rear power take-off of any 2-plow tractor for low operating cost.

Low Weight:

Only 1400 pounds. Spray in any kind of weather—rain or shine. Does not pack the ground or create ruts.

Wider Coverage:

Turbulent air as the carrying vehicle produces a spray particle size so small, higher concentrated chemicals can be used. Result —less gallonage per acre. Will cover 20 acres per hour.

Deeper Penetration:

Up to 250 feet from the nozzle. Provides any desired degree of foliage agitation for complete penetration into thick leaf cover. Sprays 16 to 20 rows in one swath.

Turbine Type Axial Flow Blower:

Creates a blast of air in jet formation (1400 CFM) controlled from a gentle breeze to a force of 180 MPH. At no time does liquid or dust pass through the blades.

Stainless Steel Liquid Tank:

100 gallon, with mechanical agitation. Never corrodes. Lasts a lifetime.

Adjustable Axle:

Eliminates crop damage. 12" to 24" clearance, width 58" to 78".

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BUFFALO TURBINE

Rhinehart, of Lockport, were named directors of Genesee, Orleans, and Niagara counties.—*William Stempfle, Sec'y, Batavia.*

Anticipate the Future

GEORGIA—What has occurred in the past is important, but the vegetable producer who anticipates the future and adapts his operation to changing conditions is usually the most successful.

Joe Shelly, executive secretary, Vegetable Growers Association of America, elaborated on this theme as banquet speaker at the Market Managers Short Course sponsored recently by University of Georgia at Batonton.

Shelly pointed out that the vegetable industry was now entering its third stage, that of large volume, low margin operation, caused by elemental forces in our economy. This is bringing with it, Shelly said, vertical integration, contract farming in which large retail food firms may eventually contract vegetable production under definite specifications. The producer who wants to remain in business must make the necessary adjustments, he stated.

The speaker also stressed to growers and market managers the importance of quality in creating repeat sales.

HEAD NEW ASSOCIATION

Officers and board of directors of newly-formed New Mexico Vegetable Growers Association elected during recent organizational meeting at New Mexico A & M College are (front row, left to right): V. L. Stockard, Portales; Howard Stroup, Artesia, president; (back row, left to right): B. D. Luchini, Derry; W. C. Randle, La Mesa, secretary-treasurer; Ed Kynaston, Animas; Douglas Tharp, Deming, first vice-president; Berry Hobbs, Lovington, second vice-president; W. A. Patterson, Roswell. W. A. Wunsch, head of Fruit and Vegetable Standardization Service, New Mexico State Department of Agriculture, will serve as advisor on production, marketing, advertising, and promotion.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Apr. 1-2—Seed Processors Conference, Recreation Hall, University of California, Davis.

Apr. 10—Annual field day for Irish potato and cabbage growers, Potato Investigation Laboratory, Hastings, Fla.—Mason E. Marvel, Ass't Vegetable Crops Spec., Univ. of Florida, Gainesville.

June 14—Fourth annual Long Island Strawberry Festival, Mattituck, N.Y.

June 12-14—Idaho Grower Shippers Association, 30th annual convention, Sun Valley.—Edd Moore, exec. sec'y-manager, Box 1100, Idaho Falls.

Sept. 8-9—United Fresh Fruit and Vegetable Association, 10th annual merchandising and management conference, Morrison Hotel, Chicago, Ill.—Association offices: 777 14th St., N.W., Washington 5, D.C.; 903 Grand Ave., Kansas City 6, Mo.

Sept. 24-26—Florida Fruit and Vegetable Association, Hotel Fontainebleau, Miami Beach—Headquarters: 4401 E. Colonial Dr., Orlando.

Sept. 29-Oct. 1—Texas Citrus and Vegetable Growers and Shippers, Shamrock-Hilton Hotel, Houston.—Headquarters: Harlingen.

Oct. 13-15—Produce Packaging Association, eighth annual conference and exposition, Park Sheraton Hotel, New York.—Robert A. Cooper, exec. sec'y, 500 Fifth Ave., N.Y. 36, N.Y.

Dec. 8-11—Vegetable Growers Association of America Golden Anniversary Celebration, Cleveland, Ohio.—Joe Shelly, Sec'y, 528 Mills Bldg., 17th St. and Pennsylvania Ave., N.W., Washington 6, D.C.

Rear-mounted fork lift for the 350 Utility easily handles loads up to two tons. Front-end lifts handle up to 1,000 pounds.

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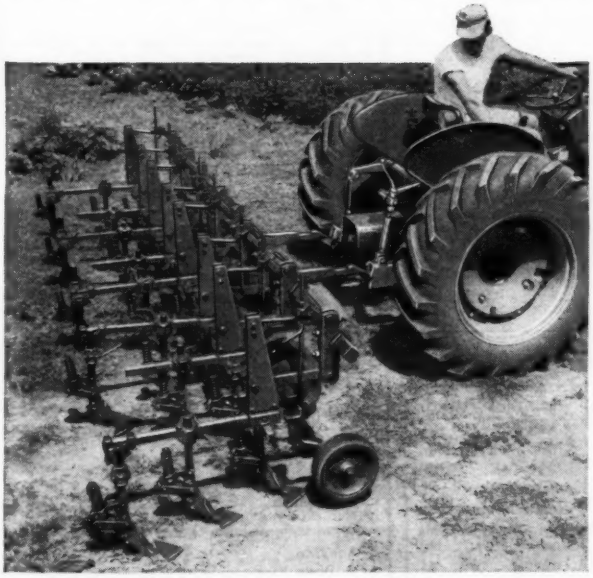
Using an International 350 Utility tractor equipped with fork lift, one man now handles 710-pound pallet boxes from three mechanical bean harvesters for Larsen Canning Company, Green Bay, Wisconsin. Two pallets are loaded and unloaded at a time. Formerly, using sacks and hand methods, seven men were required. Additional savings in unloading operations at the processing plant also are reported. In the field, even wet, soft, or sandy soil fail to slow up loading operations, due to the 350 Utility's big-diameter tires and power steering.



Year-around utility. In addition to fork lift, heavy-duty loaders, and similar equipment, there is a full line of advanced field equipment for the 350 Utility. Above, the new McCormick® four-row, Fast-Hitch cultivator . . . easily adjusted for rows from 28 to 42 inches apart, and you attach or detach it in seconds!

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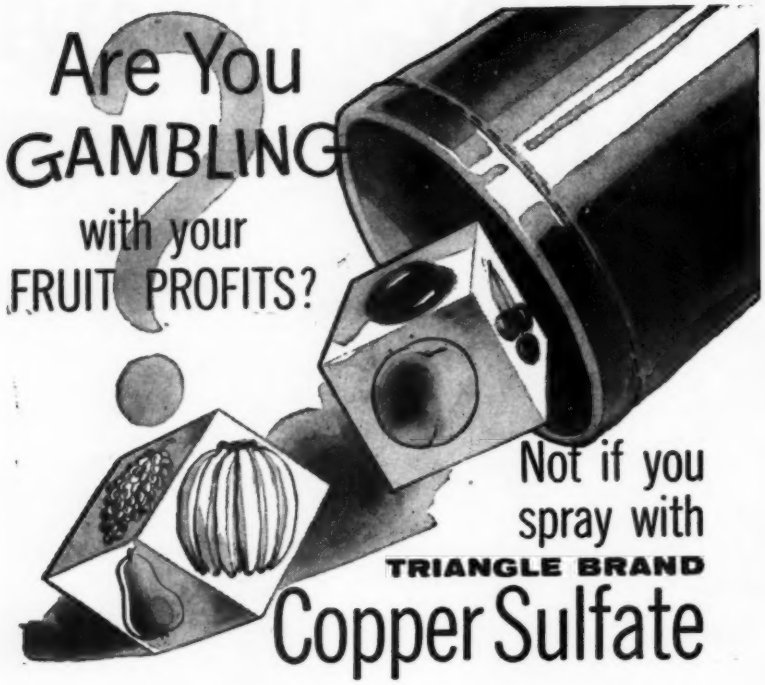
International Harvester Products pay for themselves in use — Farm Tractors and Equipment . . . Twine . . . Commercial Wheel Tractors . . . Motor Trucks . . . Construction Equipment—General Office, Chicago 1, Illinois.



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STATE NEWS
Special Report

PROMISING VARIETIES FOR ILLINOIS

CUCUMBER

Ohio M.R. 200

A mosaic tolerant slicing cucumber, suggested for use in areas where mosaic is a problem. Fruits are about same size as Marketer but are blocky and slightly tapered at stem end. Slightly earlier than Marketer.

Ashley and Stono

Two varieties being well received in Illinois. Both are of the Marketer type and downy mildew resistant. In 1957 vines of both varieties held up much better than Marketer.

MUSKMELON

Burpee Hybrid

In Illinois trials this muskmelon produced good early yields. Fruits are round to slightly oval and have good flavor.

HYBRID ONIONS (YELLOW)

Abundance

A high yielding variety which produces bulbs large and deep globe in shape. Matures in about 105 days and stores only until early winter. Recommended for commercial use.

Elite

A heavy yielder which can be held in storage until late winter. Of the Early Yellow Globe type but matures in 105 days. Recommended for commercial use.

PEPPERS

Liberty Bell

Resistant to tobacco mosaic and shows tolerance to cucumber mosaic. Similar to California Wonder, but at Urbana, Ill., it has outyielded and produced larger fruits than either Yolo Wonder A or California Wonder.

U. of I. No. 6

Selected from crosses between Allbig and Sterling. High yielder both early and late. Good coverage of fruit. Fruits are somewhat elongated, not as smooth as Yolo Wonder, and have tendency to taper. Medium thick flesh.

TOMATO

Glamour

A crack resistant, red variety. Classified as a midseason tomato but produced the top early yield and highest percentage of No. 1's in southern Illinois trials.

KC 146 and KC 135

Two crack resistant varieties developed by Campbell Soup Co.; recommended for canning in Illinois. KC 146 is favored because of good resistance to fusarium wilt. Good yielders.

Homestead

A promising fusarium wilt resistant variety for fresh market use in Illinois. Has fruit like Rutgers. Use improved strains.

SWEET CORN

Victory Golden

Has been grown in northern Illinois for several years and is becoming more popular each year as a fresh market corn. Has high quality and good tip coverage; produces a very satisfactory yield. Matures in about 83 days. Highly recommended for northern half of state.

Asgrow Golden 60

Has good appearing large ears and satisfactory yields in 1957 Illinois trials. Matures in about 85 days.

SWEETPOTATO

All-Gold

A promising variety for Illinois, with a russet golden skin and orange flesh. Resistant to wilt and internal cork, but not to soil rot.

Acadian

A Porto Rico type with a copper skin and deep orange flesh. Has moderate resistance to soil rot. Looks like it has possibilities for Illinois growers.

WATERMELON

Tri-X 317

A seedless hybrid with good quality. The striped, round fruit average 10 to 12 pounds. Has proven profitable for roadside marketing. — *Norman F. Oebbe, University of Illinois, Urbana.*

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Distributed throughout U.S. and Canada

The Howard Rotavator Gem comes in tillage width of 20, 24 and 30 in., equipped with the new, fully tested, 14.9 hp Howard Twin engine (also available with mounting for Wisconsin AEN or TF engine). Three forward speeds, plus reverse. Fully enclosed transmission and drive. Positive, accurate depth control. The ideal machine for smaller acreages, performs all tillage jobs with professional finish.

Careful shielding and close-coupled design enables the Gem to till close to growing crops.

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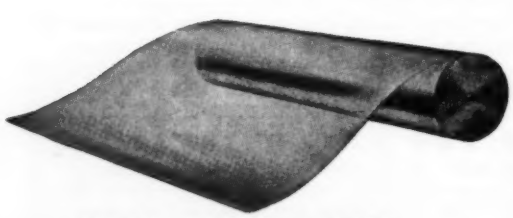

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GREENHOUSE CROPS

NEW TOMATO STRAINS

Ohio horticulturist reveals new selections at Wooster station

NEW strains of tomatoes bred to order for the Greater Cleveland greenhouse industry were unveiled recently at Ohio Agricultural Experiment Station, Wooster.

Three years of selection and two seasons of greenhouse trials have gone into one of the strains, now ready for the growers. Plants of another strain are being planted now for spring crop trials.

In breeding new lines from the old Globe tomato, Dr. I. C. Hoffman, station horticulturist, winds up his career where he started in Wooster 30 years ago. He will retire July 1. His first research at Wooster led to the introduction in 1929 of the Association Globe. Globe Strain A followed and was long the greenhouse standard tomato until fusarium wilt laid it low.

Wilt Problem

The wilt problem was solved by the WR (wilt-resistant) varieties developed by Dr. L. J. Alexander, station botanist and plant pathologist. The WR-*7* strain now comprises much of all greenhouse tomato plantings in northern Ohio, where tomatoes are a $10 million annual crop. Lately there has been some dissatisfaction over the WR-*7*.

Several seasons ago Dr. Hoffman came across a single plant of striking appearance among Globe Strain A plants. It proved to be a hybrid between Globe and WR lines. The hybrid yielded seven clusters of tomatoes. Plants from the seed proved to be completely wilt-resistant.

The newcomer, still known only by the selection number Globe A 1-5, has been on trial in Ohio in Hoag's greenhouses, Elyria and Rocky River; the Berea Greenhouse Co., Berea; Andrew H. Rosbough's greenhouse, Middleburg Heights; and Tom Wolfe's greenhouse, Avon. Yields have equaled or exceeded those of the WR strains.

Even more promising, Dr. Hoffman said, is Globe A 1-3-1-1, to be tested in greenhouses this spring. Also on trial are two selections of WR-3, both higher yielding than the parent.

These are all pink strains, favored by Cleveland growers over reds for better coloration. But the difference is only skin deep; the interior of the fruits is identical.—*Fred P. Lynch.*

WEED-KILLING "BLANKET" IN ACTION! All celery planted same time. Only difference: celery at left was band sprayed once with Vegadex at planting. Results like this last year saved commercial growers from $20 to $90 an acre on hand-weeding costs.

THIS NEW WEED-KILLING "BLANKET" CAN SAVE YOU $20 TO $90 PER ACRE IN VEGETABLE CROPS

It's Vegadex,® and it kills weeds for you in a new way. You spray it only once—at planting time. Vegadex forms an *invisible chemical blanket* over your soil that smothers weeds. Pesky annual grasses—even tough weeds like purslane and henbit—sprout, touch the "blanket," and die. Because weeds seldom appear, Vegadex can cut labor costs for hand weeding as much as $90 per acre. Your vegetables come through unharmed, with no weeds to fight them for sunlight, water and plant food. And Vegadex won't "build up" in your soil, even if you spray each time you plant.

Before you plant your next crop, drop by your nearest Monsanto Farm Chemicals Dealer. He'll tell you how Vegadex adds extra profits to every acre of vegetables you harvest.

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Make sure you're spraying right. Ask your Monsanto Dealer about the special offer on the SPRAY-RATER that accurately measures the amount of spray your rig applies per acre.

VEGETABLE GROWERS! New Vegadex kills off annual grasses and many broadleaf weeds in greens, garden beets, cole crops, beans and corn.

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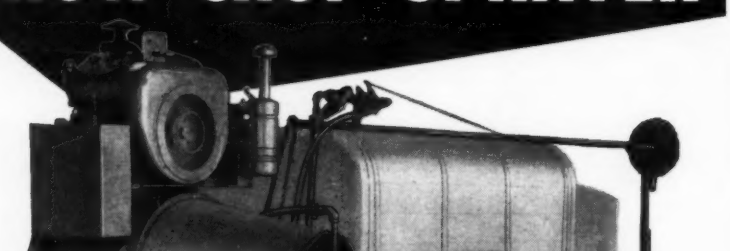
ROW CROP SPRAYER



- All you have to do is attach the Hardie 2-fan Jetaire Row Crop attachment to the frame of any sprayer. It comes complete with a heavy duty air cooled engine and controls.
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POTATOES

COMPULSORY INSPECTION

New bill up for approval destined to meet opposition

THE old National Grade Labeling Act bill, which never got very far, has been replaced with a new bill recently introduced to Congress. The new inspection bill will require that all potatoes packed in a container bearing a U. S. grade must be inspected and certified to that grade before shipment. It would also be unlawful to sell, ship, consign, or otherwise handle lots of potatoes marked with a U. S. grade knowing they had not been inspected. The bill was introduced by at least two congressmen. Chenoweth of Colorado and McIntire of Maine.

The new bill is short and to the point, with considerably fewer provisions involving controls than the first bill. Nevertheless, it is expected that certain potato states will again put up a fight against it.

The large commercial producing states like Maine, Idaho, and Colorado will probably support the bill. On the other side of the fence are states with small potato farms such as New York, Ohio, and Wisconsin.

Spearheading the fight for the bill will be the National Potato Council, with the potato section of the Vegetable Growers Association of America opposing. The VGAA has repeatedly declared for grower independence from government controls.

Boiled down, those in favor of the bill will say compulsory inspection is necessary to eliminate off-grade potatoes from the market since they draw down the price and put a damper on consumption. A bad potato does not make a repeat sale.

Those against compulsory inspection will say that we already have penalties in our laws for misbranding potato packs and there is no need for adding more. Also that compulsory inspection laws will drive the smaller producers out of business and that this really is what the big producing states are trying to accomplish.

POTATO GRADES AGAIN

THE move by the USDA to revise federal potato grades seems to be weakening. A number of states have

ATTEND BANQUET

Joseph Shelly, left, executive secretary, Vegetable Growers Association of America, tells Marcia Hahn, 1957 Ohio Vegetable Queen, about VGAA's 50th anniversary annual meeting in Cleveland, scheduled to begin December 8. Paul S. Rusteik, Vermilion, association president, joins the pair. The trio got together at banquet held during annual meeting of Ohio Vegetable and Potato Growers Association.

gone on record against the proposed grades and their reasons have substantial foundation. One of the problems is in changing the Size A limitation from 60% 2¼ inches and up with a minimum of 1⅞ inches to 50% 2½ inches and up with a minimum of 2 inches.

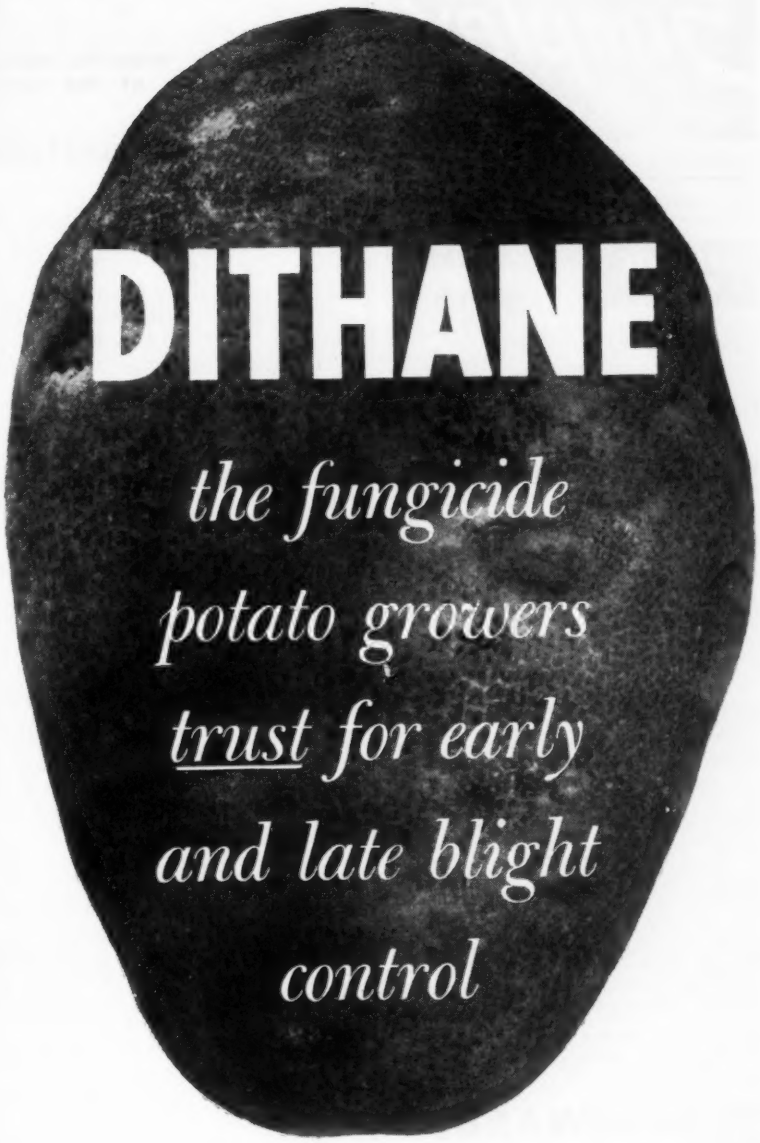
The USDA maintained that the new regulations would have little effect on present grading practices, that potatoes were customarily packed, sold, or purchased at a higher quality than U. S. No. 1 grade which is the primary trading grade.

But some states maintain that the proposed grades would throw many of their potatoes into a lower grade. This is particularly true in those states where growers do not store their crop. For instance, Florida feels that the Size A requirement is too stiff for early potatoes.

In face of this opposition, it seems likely that the USDA desire to adopt the new grades by July 1 will not meet with success. It would be far better to try out the new grades, both for the early and stored crop, and find out exactly how they will affect the producer. With this information, it will not be hard for producers or the USDA to know, for once and for all, exactly how they stand.

ACREAGE GUIDES

IN its annual acreage-marketing guides for summer and fall potatoes in 1958, the USDA is recommending a reduction of 6% in total acreage. In the 10 early summer crop states, 97,650 acres are recommended for 1958, compared with 101,300 acres planted in 1957. In the 23 late summer crop states, 175,635 acres are recommended, compared with 184,000 planted in 1957. In the 26 fall crop states, 818,290 acres are recommended compared with 880,100 acres planted in 1957.



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TEXAS PLANT FARMS
Jacksonville, Texas

SMALL CROPS WITH LABELS

Massachusetts growers market quality produce at top prices

By CHARLES L. STRATTON

ALTHOUGH Don and Bob Henderson, of Essex County, Andover, Mass., are small growers as far as market gardeners are concerned, with about 25 acres, they have built up a good demand for their produce through quality and labels.

"We believe in labeling our celery, trellis tomatoes, and several other items," Bob explains. "Our experience has been that customers buy a labeled item before an unlabeled item. If they like a product, they'll come back and ask for it. We believe growers have a tendency to put up a better product when they label."

Proper Blanching

The Henderson brothers make sure their celery is properly blanched. "When packing, we trim heavily and wrap only double stalks," Bob says. "We get a good price for our fancy blanched Waltham Summer Pascal under our own name."

They get about 800 to 1000 bunches of celery per acre. The packing is done in a shed and generally requires seven workers: four Puerto Ricans trimming and washing, the Henderson brothers wrapping an average of 300 bunches an hour, and their younger brother, Allen, packing in crates. Ten pounds of crushed ice goes in each box of celery before shipping to the Boston market.

Selected Tomato Seed

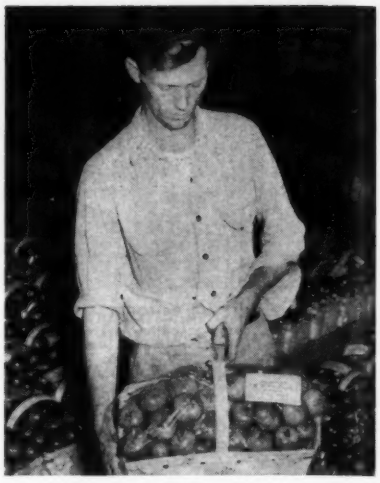
Their trellis tomato strain is Comet, a variety for which they have selected their own seed. Bob says, "Our tomatoes stay clean and don't have any blemishes. We get over 4000 baskets to a 2-acre crop.

"We figure on putting a lot of time into trellis tomatoes," he adds.

"We shop early for help and get good workers who stay with us. We prune at the right time, irrigate with some 1200 feet of lightweight aluminum pipe, and spray according to recommendations."

In August they select trellis tomato seed by either tying white cloth on the plant or picking the fruit. They are interested in fruit shape and set. The Hendersons have been selecting for eight years now, and class 95% of the harvest as No. 1's. Out of 130 baskets picked in one day, there were only two baskets of No. 2's.

Bob and Don Henderson have made a place for themselves by specializing in quality produce only. There is still room for the small growers who raise quality vegetables. THE END.



Bob Henderson shows 12-quart basket wrapped with cellophane, labeled, and overfilled to make a neat package of trellis tomatoes.

Papers are drawn close on celery for tight stalks. There is good demand for local celery that is grown, blanched, and packaged right.

NEW CANNING TOMATO

GENEVA 11 is a promising new canning tomato developed at Cornell University's experiment station, Geneva. It is recommended to growers and the processing industry for its earliness; productivity as measured by good yields at all periods, early, midseason, and late; good red exterior color of fruits, and resistance to verticilium wilt.

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Similar results are claimed by users of Oliver Iron Age Spra-Blast machines wherever truck crops are grown. Spray coverage and crop yields are better... time and labor costs are less...*profits are bigger.*

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are "tailor made" for this kind of service. These rugged engines, when specified for irrigation pumping, are furnished with Stellite exhaust valves and valve seat inserts and positive-type valve rotators . . . designed and constructed to increase valve life anywhere from 200% to 500%, at the same time reducing valve servicing and maintenance in like measure. In addition, Wisconsin irrigation engines are equipped with an Automatic High Temperature Switch, quick and positive in action, which provides the best protection against preventive maintenance negligence . . . shuts off the engine before damage can occur.

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NJVGA CITES LEADERSHIP

Illinois member receives annual achievement award

JACK Armstrong, of Springfield, Ill., became the second recipient of the top National Junior Vegetable Grower Association's annual achievement award at the recent NJVGA convention held in his home city. The first such honor was conferred a year ago upon Betty Lou King, of Caro, Mich., this year's NJVGA president.

Jack has won some 400 ribbons at state and county fairs for noteworthy exhibitions, and grown as many as 20 kinds of vegetables in different projects, with tomatoes as a specialty.

Editor's note: This is the first in a series of articles about outstanding young men and women who are being prepared for careers in horticulture through their association with a unique youth organization.

While a student at Springfield High School, Jack earned first place in the junior display at the state fair; for three successive years he won first place with vegetable displays at the Sangemon County fair. He was also active in FFA, 4-H, choir, basketball and softball.

During his seven-year membership in NJVGA, he served for five consecutive years on the national executive committee, and was elected vice-president in 1955, president in 1956, and director in 1957. Last year Jack was also co-chairman of the annual national convention.

He attended seven consecutive NJVGA conventions. He was the 1951-52 state demonstration winner; 1953-54 sectional winner and 1955 national winner in the fresh market section of Production and Marketing Contest; 1957 regional winner in variety trials section of the Production and Marketing Contest, and took part in the Judging, Grading, and Identification Contest.

At present Jack is a senior at William Jewell College, Liberty, Mo., majoring in biology. He served as

A bi-monthly page for the younger generation of vegetable growers and their national organization, the National Junior Vegetable Growers Association. For information write Grant B. Snyder, French Hall, University of Massachusetts, Amherst, Mass.

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Award winner Jack Armstrong, Springfield, Ill.

president of Freshman Baptist Student Union Council, sophomore class president, chairman of Student Senate and Student Council, and president of Missouri Academy of Science. In addition, he is a member of Kappa Alpha, Beta Beta Beta, and the varsity basketball squad.

For the last two summers he has worked as assistant to the extension vegetable crops specialist at the University of Illinois. After graduation plans call for graduate work in vegetable crops. THE END.

BRUSSELS SPROUTS PRODUCTION

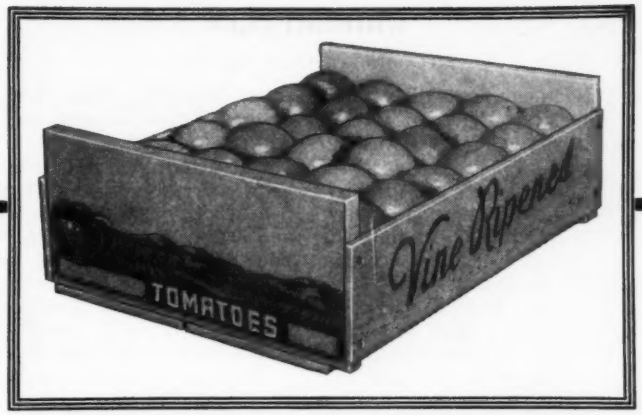
BRUSSELS sprouts are rapidly gaining in popularity with consumers—especially frozen Brussels sprouts.

The biggest production area in the U. S. for Brussels sprouts is the 4000 to 5000 acres located in San Mateo and Santa Cruz counties of California. Only one other area in the country, Long Island, N. Y., produces any sizable amount of sprouts—around 800 acres annually.

In 1953 the largest crop of Brussels sprouts on record was reported—34,100 tons, with the 1954 crop of 31,300 tons in second place. Production in 1955 being more nearly in balance with demand, grower returns for the 18,800-ton crop were above the depressed price of 1954.

Figures indicate a trend toward increased consumption of frozen Brussels sprouts. In 1951-52 U.S. consumption totaled 24 million pounds. For 1955-56 it was estimated at 29 million pounds.

Brussels sprouts are an expensive crop to grow. R. H. Sciaroni, San Mateo County farm advisor, and Philip Parsons, California extension economist, report a typical sample cost of $690.91 an acre—about 7.7 a pound. Yields of 4½ to 5 tons per acre are considered good, with yields going from 6 to 8 tons during favorable years with an extended picking season.



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GIBBERELLIN

(*Continued from page 9*)

following treatment with gibberellin, but when buds and shoots of forcing crops were sprayed there was no effect.

Although increased yields of high quality celery have been produced with gibberellin, this effect must be carefully weighed against certain compensating factors. As a result of the rapid growth; treated celery became lighter green, wilting was more severe in hot-dry weather, and plants were more susceptible to blackheart and bolting. Time of harvest was more critical. The accelerated maturity soon resulted in overmaturity with greater pithiness in the outer petioles, particularly in summer Pascal.

Effects on Diseases

By increasing the growth rate of some slow growing varieties of vegetables, the effects of certain foliage diseases may be partially overcome. This was illustrated during the past season in a commercial field of Fireball tomatoes in Berrien County, Michigan. A row of plants sprayed with 100 ppm of gibberellin, 10 and 25 days after transplanting, retained a good foliage cover for weeks longer than adjoining rows which were severely infected with early blight *(Alternaria solani)*.

There are other gibberellin-induced growth responses that may prove beneficial. Seed treatments of peas and beans promote earlier emergence and lengthen the stems below the flower nodes. If plant heights could be increased without weakening the stems, this would produce plants adapted for mechanical harvesting.

Fruit setting without pollination in tomato, cucumber, eggplant, and pepper is stimulated by spraying the flowers with gibberellin. The tomato fruit, however, were often small, sometimes russeted, and the treated flower clusters formed elongated stalks. The use of gibberellin in combination with normal pollination, and other chemicals, for promoting fruit set warrants further study.

Earlier Flowering

The flowering responses induced by gibberellin should prove valuable in vegetable seed production. Treated head lettuce, endive, and Chinese cabbage bolt even in cool temperatures and short days. In other annuals including mustard, dill, radish, and spinach, uniform bolting and flowering can be induced weeks earlier.

Furthermore, flowering and seed production without cold or over winter exposure is possible in carrots, collards, and some varieties of celery. With gibberellin treatment of most varieties of cabbage, kale, turnips, rutabagas, parsnips, celery, and beets, the amount of cold required for flowering is reduced. Flowering is also speeded up if gibberellin is applied after these plants are exposed to cold. Seedstalks on plants treated with gibberellin are usually taller, and the stems elongate before flower buds appear.

Special flowering responses on some crops have been observed. In cucumbers vine growth is greatly stimulated but flowering is delayed. This encourages the first fruit to form on the runners and may facilitate mechanical harvesting of pickling types. Complete and partial male sterility has been noted on sweet corn sprayed when about knee high, and when the immature, not yet visible, tassel is 1 to 2 inches in length.

Gibberellin is an important addition to the list of chemicals that may become useful in vegetable production. The possibilities with gibberellin lie

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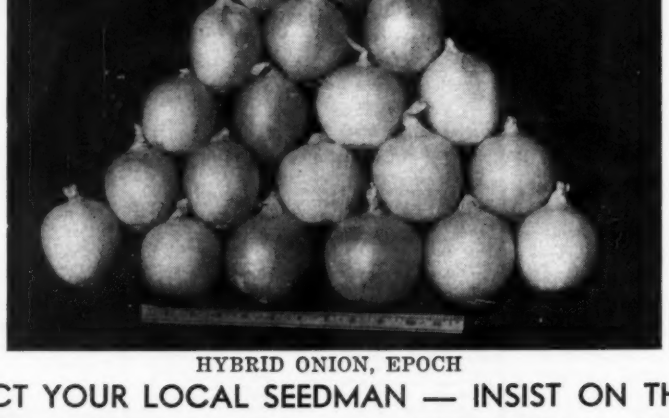

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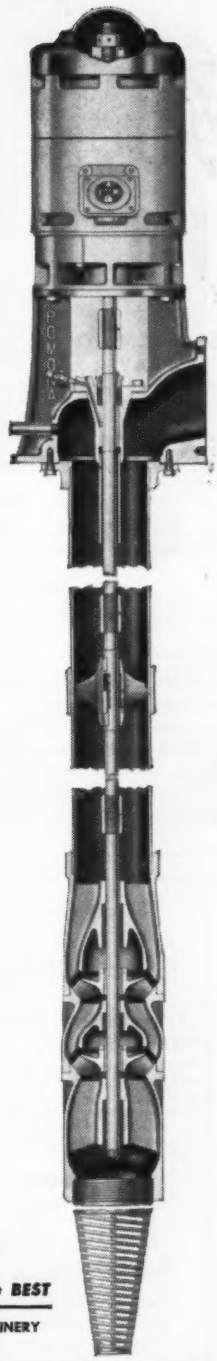
in as yet unexplored areas of hormone regulation. These include control of plant heights and leaf areas, acceleration of flowering and seed production, and growth promotion under adverse conditions of light and temperature. These new uses will not be hastily realized. Nor will they be developed in the absence of disturbing side effects which can be deleterious unless certain cultural practices, fertility and moisture levels, and harvest and handling procedures are adjusted.

Some General Effects of Gibberellin on Vegetable Crops

- There is an increase in plant height especially of dwarf or of bush type varieties of peas, beans, and tomatoes.
- A given type or variety responds to a wide range of concentrations, and varieties of the same crop often react differently.
- Crops respond to small amounts, usually within the range of a few grams to several ounces per acre.
- The most effective and efficient method of application is in water solution as a foliar spray; however, roots and other plant parts will absorb the material.
- The effects on growth of some plants may be measured within a few hours, and in others only after several days or weeks.
- Gibberellin is mobile and systemic in most plants. Potato tubers can be caused to sprout before harvest by spraying the foliage, and tomato fruit can be set by treating the roots.
- The growth stimulatory effects are temporary. For this reason frequent small dosages are often more effective for continued growth than a single large one.
- Growth responses occur from both cell enlargement and cell division, but primarily from the former.
- Only growth of plant parts above ground is stimulated. Root growth is seldom affected. Consequently, yields of root crops, onions, and potatoes are not increased.
- New growth is usually paler green. This can usually be offset by heavier fertilization, especially with nitrogen.
- Maturity is often hastened in crops grown for their vegetation (celery), flower parts (broccoli), fruits (tomatoes), and seeds (peas, beans).
- Gibberellin is not toxic to animals and no toxic residues from spray treatments have been found on food crops. This is because extremely small quantities are usually applied, and the chemical is systemic and not stored in any particular part of the plant.

THE END.

Once you've seen this new Fairbanks-Morse Pomona Turbine Pump you'll know:



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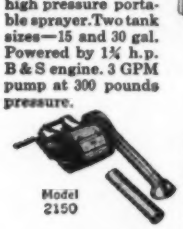

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FLORIDA TECHNIQUES

(*Continued from page* 10)

of water should be as small as possible. Irrigation should continue until all ice is completely melted. Rotating sprinklers should be set for not more than one revolution every two minutes.

Flooding of fields is used to a limited extent where water and pumping facilities are available. In the Hastings potato growing area water is run down every eighth to tenth row and allowed to stand in the middle until danger of frost has passed. A complete covering of soil with water affords excellent protection. Research has shown that tomato and bean plants in pots may be immersed in water for as long as 36 hours without significant injury.

Plant Protectors

Hot caps are used to a limited extent on melons but are not too practical in Florida because the daytime temperatures cause excessive temperatures inside the caps and damping-off is increased.

Covering of cucumber seedlings with cypress board troughs has been practiced for more than 30 years. Troughs are made by nailing two cypress boards together, and these V-shaped troughs are inverted over the cucumber row. During the day when there is no danger from cold weather, they are turned back beside the row on the windward side to protect the plants from wind and sand blast. Because of the expense, few new troughs are being made.

Heating

Heat from several sources is used extensively. Material such as old automobile tires alone or filled with sawdust and saturated with oil, windrows of pine needles, sawdust, wood, or palmetto roots, is placed on the windward or north side of fields and sometimes throughout the field, and is fired up. This creates smoke (which is of little value) and some heat which causes a turbulence of the air over fields and reduces the danger of frost.

Open smudge pots and stack-type oil-fired heaters are extensively used in citrus groves and are used some in vegetable fields. A 9-gallon capacity square open pot burner will consume approximately 1 gallon of fuel oil per hour; with wind this increases to from 4 to 5 gallons per hour. Growers figure it costs them approximately $50 a night to fire an acre. When only 2 to 3° F. must be overcome, and only for a short time, it may be economical, but when the temperature drops well below freezing and stays there, the risk of still losing the crop is great.

Several growers have used the long stack "Salamander" oil heaters in tomato fields on the lower east coast of Florida and prevented frost injury. One grower used a helicopter in conjunction with these heaters and saved his crop. However, the temperature in his area did not get much below freezing and only for a short duration.

Experimental work with several new techniques has shown little practical results. Workers attacked the problem of frost control in tung groves by applying an insulating material on the plants. Air was trapped in small bubbles on the surface of the leaves and plant. A material had to be found to make foam that would stick to the plant, be nontoxic, and be easily washed off by rain. A mixture that worked quite well consisted of Cellite, "Tide," gelatin, "Rainbow Cleaner," and glycerine, mixed with water.

Tomato plants were sprayed with this basic formula, plus a formula in which kaolin or charcoal was substituted for the Cellite. In one test small tomato plants were severely injured by the foam. In a later test, pepper plants were sprayed when the temperature dropped to 38° F. The temperature went as low as 30.5° F. and the untreated plants were killed, but the coated plants came through without damage. This work was discontinued because it was set up for tung groves.

It has also been shown that the nontoxic wax emulsions used on plants afford some frost protection. Little research has been done in Florida to exploit this type of protection on vegetables. THE END.

WHY ROTATE CROPS?

ALTHOUGH little is known experimentally regarding the effect which certain vegetable crops have on the crops following them in the rotation, plan to include a soil or sod-resting crop with every three- to four-year rotation, say New Jersey extension specialists.

It is known that cabbage, cauliflower, and broccoli will not produce high yields on fields which were planted to these crops the previous season. The same thing is true with some vine crops and asparagus.

To insure against possible yield reduction the first, second, and even third year when converting to sod rotation, concentrate fertilizer and irrigation water, and give better care to the smaller acreage.

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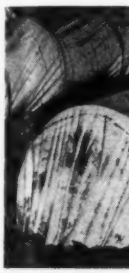

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many adapted varieties of our common vegetable crops which possess a worthwhile measure of frost resistance or tolerance. A variety must be acceptable first in a number of other important ways to have its use considered for commercial production. Some varieties do exist that meet the requirements. Some muckland head lettuce growers in Wisconsin are using frost-tolerant strains for summer plantings scheduled for September harvest. This is an area in which variety improvement in this respect can contribute to effectively lengthening the growing season for vegetable producers.

Plant Protectors. This method of frost protection is largely restricted to our market gardeners. The added labor and expense has been largely

Polyethylene supported by wire wickets. This arrangement permits plants to grow quite tall.

prohibitive for larger growers. For cucumbers, tomatoes, peppers, and other frost-sensitive crops grown for processing, the economic advantage of somewhat earlier harvest is not enough to warrant their use. For smaller growers producing for local markets it is a means of obtaining earlier harvest. Here harvesting one week earlier can often more than repay several times the expense.

Some growers have experimented with continuous, tent-type plastic row covering for tomatoes. Several of these growers report harvesting marketable quantities of tomatoes from one to two weeks earlier than from later planted, unprotected plants.

Cultivation Practices. The acreage that can be successfully protected using these methods is limited. When hard freezes are predicted, time is often limited, and the acreage coverage depends upon amounts of available labor and equipment. Potato growers in our sand area often begin planting in early April. Hard freezes frequently occur after the crop comes up. Small acreages can be hilled to cover the young plants. The ridges are dragged off a day or so later when the frost danger is passed.

Sweet corn which has just emerged can be lightly ridged to help protect the growing point of the plants from frost injury. This has been successfully practiced by gardeners gambling on a few acres for extra early marketing.

Irrigation. This is becoming an important method for both early spring and fall season frost protection for certain fruit and vegetable growers. Some strawberry growers have purchased systems primarily for frost protection reasons. During the critical spring blossoming period an untimely frost can result in cutting yields by 50% or more. The proper use of an irrigation outfit has been known to pay for itself in a single season. Irrigation has also been used to protect peppers and tomatoes from damage by early fall frost. The picking season can often thus be extended for several weeks more.

Smudges. This method is sometimes used for small scale protection. Old tire casings are ideally suited for making effective smudge fires. The grower needs to be well prepared in advance. Careful planning is also needed in regard to air currents and smudge fire locations.

Air-blast Machines. Portable propeller-type air-blast machines have been tried experimentally by one of our lettuce growers. The object is to keep the air "stirred up" above the crop to prevent air stratification over the crop. The machines must be pulled through the fields at regular intervals throughout the night. The method is rather costly in terms of labor and investment in special equipment. A limited acreage can be protected by one machine. However, a few acres of a good crop of head lettuce about ready for harvest can often promise a sizable return. This is particularly true after a frost has hit in the area. THE END.

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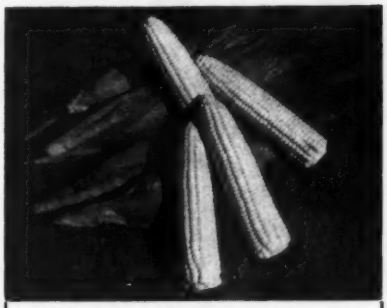

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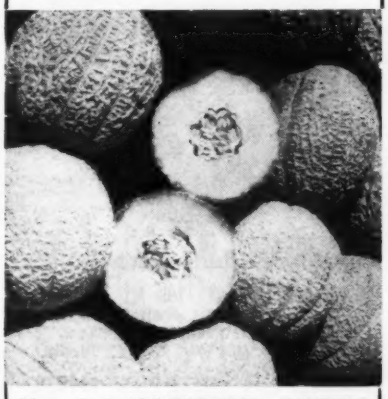

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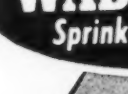

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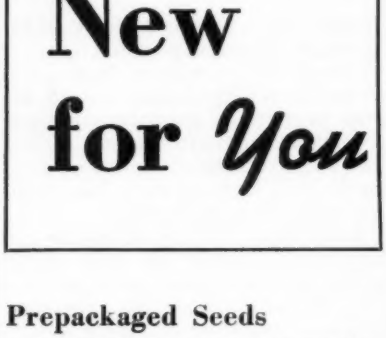
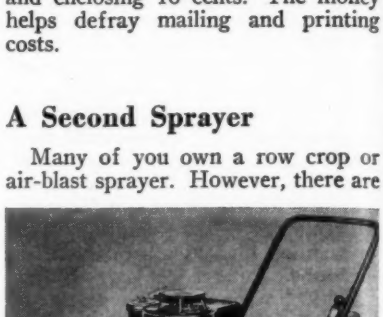


Good Tomato Stands

One of the best booklets I have read gives details on how growers can insure good stands of tomato plants. The booklet, entitled *Tomatoes by Direct Seeding*, has been so popular that it has recently been revised and brought up-to-date. All of the answers are in the booklet, including information on seedbed preparation, seeding and fertilizing, cultivation, insect and disease control, etc. You, as a subscriber to AMERICAN VEGETABLE GROWER, can receive this booklet by writing Dept. H-1, Corneli Seed Co., 101 Chouteau Ave., St. Louis, Mo., and enclosing 10 cents. The money helps defray mailing and printing costs.

A Second Sprayer

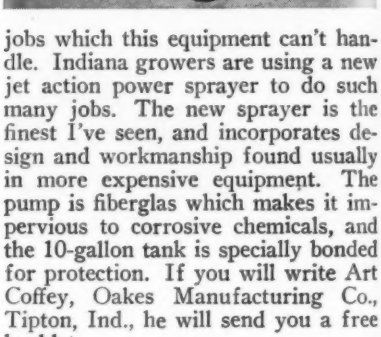
Many of you own a row crop or air-blast sprayer. However, there are



jobs which this equipment can't handle. Indiana growers are using a new jet action power sprayer to do such many jobs. The new sprayer is the finest I've seen, and incorporates design and workmanship found usually in more expensive equipment. The pump is fiberglas which makes it impervious to corrosive chemicals, and the 10-gallon tank is specially bonded for protection. If you will write Art Coffey, Oakes Manufacturing Co., Tipton, Ind., he will send you a free booklet.

Two Transplanters

Many growers have wanted a two-row trailer type of transplanter and



also a one-row trailer model. So that growers can have what they need, one of the leading transplanter companies has developed these new units for this spring's planting. Both models are available with or without band-type fertilizer spreaders. The two-row spreader is adjustable to obtain 12-row spacings between 30 and 72 inches. If you will write Julian Powell, Powell Manufacturing Co., Wilson, N. C., you will receive full details.

GEORGIA SWEETS

(*Continued from page* 13)

ing the solutions, 1 ounce of bichloride of mercury is put into 8 gallons of water, and 1 pound of borax into 6 gallons of water. Roots are dipped into either solution for 10 minutes.

A bushel of medium-sized roots will cover about 10 square feet of bed surface and will produce from 2500 to 3000 slips a month or so after bedding. Fields are generally planted to around 12,000 plants per acre (12 inches apart in 40-inch rows). Rogers, who grows around 40 acres a year, needs about 200 bushels of seed and a bed surface of around 2000 square feet.

Rogers beds roots the first week in March, putting a little manure under the bed and covering roots with sawdust. Adams in Georgia beds roots between February 15 and 20 and sets in the field from March 20 to April 10. Both growers like to plant slips about 8 inches long. Rogers dips plants in a borax solution for 10 minutes just before setting. Plants can also be dipped in a 4-4-10 Bordeaux mixture for control of black rot and stem rot.

Another basic practice in sweetpotato disease control is crop rotation. Adams spaces sweetpotato crops three or four years apart on a given field. Rogers will sometimes stretch the interval to five years on his Mississippi farm. Tobacco can never precede sweetpotatoes on a field. It carries mosaic, a virus which also affects the potatoes.

Adams is combating nematodes with soil fumigation and, as a result, is producing more number one potatoes per acre. He makes a plow-sole application of Dowfume W-85 three or four weeks before plant-setting time. Fumigation also helps control wireworms and other soil insects.

Fertilizers

In Mississippi, Rogers puts 600 pounds of 8-8-8 or 5-10-10 per acre under the hill before plant setting. He prefers the latter because it gives him a better root on most of his soils. Farther south on the Delta soils, tests show that most economical fertilization comes from application of from 20 to 40 pounds of available nitrogen per acre. Even here, some soils grow better potatoes with balanced fertilizer.

In Georgia, Adams puts 3-9-9 under the hill at the rate of 500 pounds per acre. Then he gives a side-dressing of another 300 or 400 pounds per acre two or three weeks after setting. Ten days later, he makes a second side-dressing of 3-9-9 at the same rate. Adams likes a specially made fertilizer for sweet-

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potatoes. The mixture must contain sulfate of potash instead of muriate, and a third of the nitrogen content must come from an organic form, usually cottonseed meal. He has found these materials make a better quality sweetpotato. Another factor in quality production that Adams has found is that organic matter must be completely decayed before sweetpotatoes are planted.

Sweetpotatoes require few cultivations, especially if the land has been well prepared before plant setting. Rogers usually gets by with only one or two cultivations and, at most, three.

Insect control on the growing crop is not as important as on some other crops.. Leafhoppers are among the chief pests. Adams carries on a dust program to control them with four or five applications of a 1% parathion dust spaced at 10-day intervals. The first application usually goes on three or four weeks after plants are set in the field.

Ravages Fields

Internal cork, a virus disease, is ravaging many southern sweetpotato fields. The disease turns the meat of the potato root into a cork-like substance and is not always evident from surface appearance. Production and sale of only certified seed seems to be the best means of controlling the spread of this disease at present.

Few growers practice irrigation of sweetpotatoes in the South, but Adams has found it a profitable practice on his farm for the past half dozen years. He pumps from a 645-foot deep well into two ponds and, from these, onto his fields. He irrigates other crops, too. By using this method he put less expense into the well by drilling a 6-inch hole and installing a 250 g.p.m. deep well pump, instead of making an 8- or 10-inch well and installing a 600-gallon pump, the size he uses for irrigating from ponds.

Adams waters his early crop once a week because May and June are his driest months. The late crop sometimes gets more rain than the early, and number of irrigations varies more from year to year. The early crop gets an inch per application on the first four waterings, and 1½ inches on each of the next three when no rains occur. The late crop receives 1½ inches per application, and the number varies from 4 to 8, depending upon rainfall.

It takes about 50 minutes to apply an inch of water, and Adams sets up two strings of sprinklers, seven No. 80 Rainbird Special sprinklers per line. Sprinklers are spaced 100 x 100 feet and mounted on 4-inch Ireco aluminum, pipe.

Harvest of Adams' early crop of Goldrush begins as soon as the potatoes make 100 bushels per acre, usually in July. Before harvest he goes through the fields and rogues out all diseased plants and practices hill selection for his next crop of seed.

From the small planting in the spring of the Georgia Red variety, Adams selects plants for vine cuttings. These cuttings are then set in June for the late crop, which is harvested in October and November. Plants from cuttings make better seed crops than those grown from roots in spring. A large portion of Adams' Georgia Red crop goes for certified seed production. His plants are only one year removed from foundation stock.

Cotton Gloves

Rough handling of sweetpotatoes means losses from bruises and rot. Rogers requires his workers in the field to wear cotton gloves when picking up roots and placing them in crates.

The pickers also hand grade roots as they pick, to keep all unsalable roots out of storage and to minimize handling. Roots are usually plowed out with a plow or a middle-buster mounted on a tractor.

Rogers, like most growers in his area, uses the James crate (14 x 16 x 14 inches) for both storage and marketing. As a member of the co-operative, Covington County Marketing Association he stores his potatoes in the association's storage in Collins.

Proper management of a sweetpotato storage house makes for a longer storage period.

Fumigation is essential before the storage season starts. This is accomplished in the Collins storage by burning sulfur, 1 pound for each 1000 cubic feet of space, for 24 hours. Walls and floors can be sprayed with copper sulfate, 1 pound in 10 gallons of water, for disease control.

The secret of successful sweetpotato storage lies in proper curing of the roots after they are dug and placed in storage. The curing process is best accomplished by filling the house quickly, in three or four days if possible, closing it and holding the temperature at 85° and the relative humidity between 85 and 90% for eight to 10 days. The Collins storage utilizes electric heating cables under the crates for controlling temperature. After roots are properly cured, storage rots will be at a minimum for the remainder of the storage period if the temperature is held at 55°. THE END.

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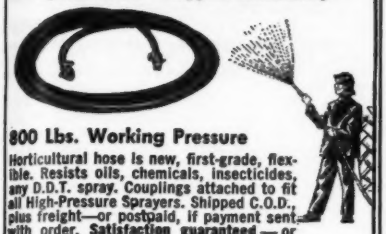

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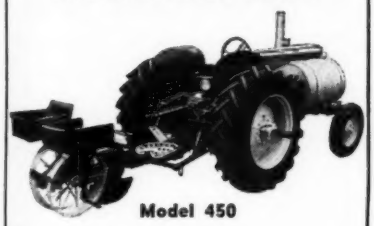

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A primary objective has been to increase pea yields while reducing the pounds of seed required to plant an acre. This can be accomplished by placing the seed at a uniform depth with uniform spacing in the row to encourage maximum germination and seedling productivity. Efficient utilization of fertilizer can also be obtained by placing it in a band to one side and somewhat below the seed.

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Although seed spacing within the row has not been as uniform as desired in field trials, the experimental seed-metering device has proved more accurate than conventional fluted feed systems. Increased yields of up to 1000 pounds of shelled peas per acre obtained with the experimental drill in comparison with conventional drills are attributed largely, however, to drill features other than precision seed spacing in the row.

Principal disadvantages of the experimental unit appear to be the increased weight of the unit, increased draft, and less mobility at the end of the fields. Basically, disadvantages are slight compared with advantages. —*Wm. E. Hays, Gerber Baby Foods.*

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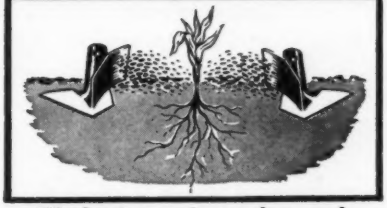

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A REAL BUY—1955 MASSEY-HARRIS PONY tractor used only 300 hours. Complete hydraulic system—lights—starter—battery—tires in new condition. Equipped with 5 ft. hydraulic dozer blade and Woods rotary cutter mounted under tractor. All operated hydraulically. Power take-off and belt pulley. Used by American Fruit Grower in experimental orchard. If interested, write, wire or call, AMERICAN FRUIT GROWER Publishing Company, Willoughby, Ohio. WHitehall 2-2000.

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ARE YOU INTERESTED IN OFFERS FROM reliable manufacturers for your invention? Patented, unpatented. HARVEY ASSOCIATES, Dept. 8A, Cambridge, Maryland.

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STRAWBERRY PLANTS—ARKANSAS' FINest. Certified Blue Tag Blakemore and Florida 90, Green Tag Blakemore grown from University of Arkansas foundation stock. 20 other leading varieties. Write for free folder. UNVERRICHT & SCOTT, Box 337A, Augusta, Arkansas.

WRITE FOR FREE 1958 DESCRIPTIVE catalog on cabbage, tomato, pepper and other vegetable plants. DIXIE PLANT CO., Franklin, Virginia.

STRAWBERRIES—EXCITING NEW SPORT variety, bulbs, vegetable seeds, etc. Catalog free. SUNNYSIDE NURSERY, R. D. #2, Bangor, Pa.

STRAWBERRY PLANTS — ROBINSONS & Dunlaps. $1.50 hundred, $10.00 thousand. Catskills $2.00 hundred, $15.00 thousand. ZAWISTOWSKI NURSERY, Bath, Michigan.

GREAT NEW CANADIAN BERRIES. 1958 catalogue lists four. Also for sale with full U. S. distribution rights, black raspberry with very small seeds and very late strawberry. EDWARD LOWDEN, Ancaster, Ontario, Canada.

SWEET POTATO PLANTS. GUARANTEED. Improved Portoricos, Red Yams, Genuine Nancy Halls, Yellow Yams, "Vineless" Portoricos, All Golds. 200, $1.00; 500, $1.75; 1,000, $3.00; 5,000, $13.75. Planting guide free. SUNSHINE PLANT CO., Gleason, Tenn.

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TENN. REGISTERED (VIRUS FREE) strawberry plants. Blakemore, Dunlap, Missionary, $6.00 thousand. Premier, Robinson, Tenn. Beauty, $8.00. Pocahontas, $10.00. SMITH BERRY GARDENS, Ooltewah, Tennessee.

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Eggplant	April 15	$4.50
Tomato	April 15	$3.75
Hybrid Tomato	April 15	$5.00
Sweet Potato	April 15	$6.00

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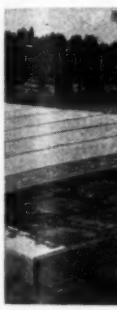

Electrically-heat bed built with leg and filling

of reinforce weight of h

The third volves the u materials in designed to requirement these three miculite, ce ment-crushe

The first difference E sulating ma growing sta grown on emerged firs pulled as co tion.

The bed cording to Bulletin No. *For Sweetp* City Electri City, N.J. and is cov wood panels lene.—*Eldon*

SWEETPOTATO PLANT BED

New type permanent structure under test at Georgia station

A NEW type of sweetpotato plant growing bed is under test at the Georgia Coastal Plain Experiment Station, Tifton.

The bed is permanent, and various soil fumigants, fungicides, and insecticides are being tested for their effectiveness in pest control. The conventional bed is movable and is built on new land each year; but the availability of new land is rapidly diminishing. If a permanent structure can be used and healthy plants can still be grown, it would be a saving to plant growers.

A second feature of the bed is the use of removable end panels to facilitate filling and removal of the soil media with tractor or power equipment, thus reducing labor requirements. The floor is constructed

Electrically-heated sweetpotato plant growing bed built with end panels to facilitate cleaning and filling bed with tractor equipment.

of reinforced concrete to hold the weight of heavy tractors.

The third feature under test involves the use of various insulating materials in the bottom of the bed, designed to reduce electric heating requirements. Being compared are these three mixtures: cement-vermiculite, cement-sawdust, and cement-crushed corncobs.

The first year's results showed no difference between these three insulating materials from the plant growing standpoint. However, plants grown on the insulated blocks emerged first and were the first to be pulled as compared with no insulation.

The bed structure was built according to principles outlined in Bulletin No. 500, *Electric Hot Beds For Sweetpotatoes,* by the Atlantic City Electric Company, Atlantic City, N.J. The bed is 8 feet wide and is covered with 4-foot-wide wood panels covered with polyethylene.—*Eldon S. Banta.*

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Old Man Weather

IRVING P. Krick is a name known to most readers of AMERICAN VEGETABLE GROWER. Dr. Krick is a leading authority in the science of long-range forecasting which he pioneered at the California Institute of Technology in the 1930's and 1940's. In 1948 he formed his own company, now called Water Resources Development Corp., of Denver, Colo.

It was Dr. Krick who participated in forecasting the time for the most favorable weather for the allied invasion of France in 1944. More recently, his prediction of the weather for the 1956 inaugural proved uncannily correct.

Now Dr. Krick points out that we must not lose to the Russians our superiority in long-range weather research and weather control. The Russians, it now comes out, started their work on long-range weather forecasts 10 years before we did and the original Russian weather research unit still hard at work.

What is at stake? The Russians are now known to be exploring the effects of pigmented dust spread over broad areas to melt snow and ice, adding weeks to the growing season.

The Russians are believed to be experimenting with cloud seeding, much as we are. What if they learn how to launch a program so vast that it could change world patterns of rainfall?

What effect would control of outer space have on earth's weather? If the country which controls outer space controls the weather, then it controls the world.

Dr. Krick says: "Let us not be skeptical about long-range weather forecasting and weather modification. We need all the support we can get."

Farmers are closer to weather than any other group because rain and drought, wind and hail, frost and heat, are part of their daily life. It's up to farmers to keep a close eye on weather control and support researchers like Dr. Krick.

Be Sure!

DO you have seed left over from last year or the year previous? And have you been wondering, if planted this year, whether it will give you a good stand?

It will save you time and money if you test this hold-over seed before sowing. If you know the rate of germination you can plant accordingly.

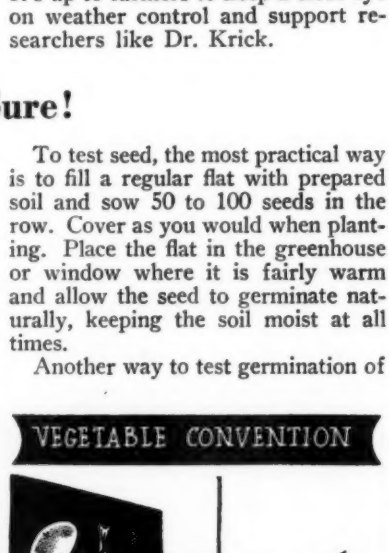
Seed of tomato, eggplant, pepper, cucumber, cantaloupe, and other melons and vegetables remain alive two to four years or more, provided it is stored in a cool place where the humidity is 60% or less, says Charles H. Nissley, extension specialist in vegetable crops at Rutgers University, New Brunswick, N. J. If you do not have storage conditions of this kind, a germination test is needed to give you accurate information regarding the viability of the seed.

Many cucumber and cantaloupe growers, Nissley points out, plant two-year-old seed. Celery growers prefer to plant three- or four-year-old seed because the seed will outlive diseases which may be carried on it. This is done by experts who know the source of seed and are sure of the storage conditions.

To test seed, the most practical way is to fill a regular flat with prepared soil and sow 50 to 100 seeds in the row. Cover as you would when planting. Place the flat in the greenhouse or window where it is fairly warm and allow the seed to germinate naturally, keeping the soil moist at all times.

Another way to test germination of seed is to place a few between moist blotting paper, putting the blotter in a shallow tray where it can be kept moist and warm. Within a week's time you can figure the percentage of germination.

A germination test will show you how thickly to sow the seed and whether it will produce strong, healthy seedling plants.



"There's a smart young tomato. He's already leader of the Bird Watchers' Club."

For Oldsters?

NOT long ago we received a letter from a 72-year-old retired farmer and businessman, Robert Thompson, of Los Angeles. He told how he brought himself out of an "abyss" of inactivity and, at the same time, earned himself some extra cash by growing cantaloupes and selling them at the roadside.

QUOTE-OF-THE-MONTH

I ask not for a larger garden but for finer seeds.

—Russell H. Conwell

"I am 72," he said, "And for four years lived the life of a frustrated retiree."

In 1957, Thompson went back to farming. He sold $4500 worth of cantaloupes from 5 acres for a net profit of $3500, counting expenses of $1000 for land rental, irrigation, seed, fertilizer, extra labor.

Thompson feels any earnest, energetic person of average intelligence can do as well or better by observing a few basic rules.

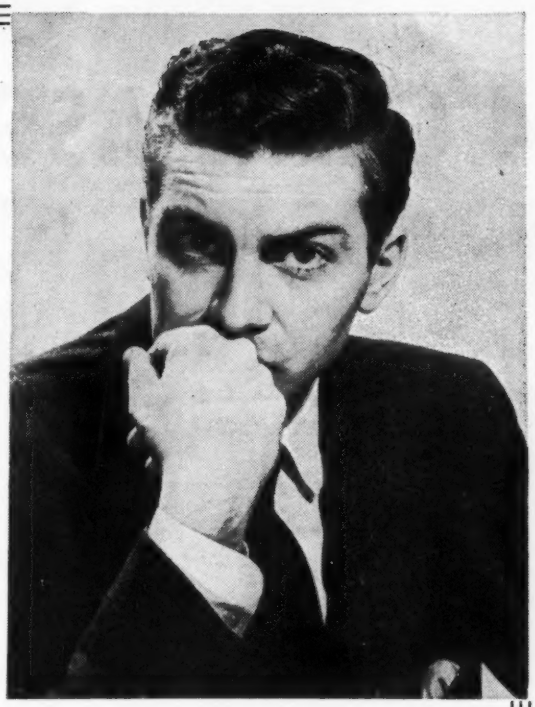
Thompson had the unusual ability to meet people and to sell successfully. He could also produce high-quality melons. These traits are not usually combined in one person.

We doubt if we could recommend that other oldsters embark on a similar venture. The unusually gifted ones will make a go of it, but the majority will find that they have more than they can handle. However, there is no doubt that many opportunities exist for sale of farm-fresh, high-quality vegetables and fruits at the roadside.

Coming Next Month

- New Ideas in Insect and Disease Control
- Air-blast Spraying Is Here to Stay
- Controlling Weeds with Sprays
- A Report on East Texas Tomato Production
- Diversification . . . the Key to Success on Andy Boy Farms in Massachusetts
- Pelleted Vegetable Seed—What to Expect of It

Do you ever wish you were single again?



Do you ever feel so tired that you would like to be alone — get away from your family? Do you find that even your children often get on your nerves . . . that you and your wife are bickering — *for no apparent reason?*

You may be cross and irritable simply because you're tired . . . run down! If you haven't the pep and energy you used to have, if you are always too "upset" to play with the children . . . too "worn-out" to be the husband and father your family has a right to expect, your condition may simply be due to a very *common, but easily corrected nutritional deficiency in your diet.* And it's time you did something about it!

Thousands of people who once felt worn out, nervous and irritable due to a lack of vitamins, minerals and lipotropic factors in their diets have been helped by the famous Vitasafe Plan. And you may, too! To discover whether these high-potency capsules can help restore your youthful vigor and vitality, just mail the coupon below for a trial 30-day supply on this amazing *no-risk offer!*

25¢ *just to help cover shipping expenses of this*

FREE 30 days supply of High-Potency Capsules

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Safe, Nutritional Formula Containing 27 Proven Ingredients: Glutamic Acid, Choline, Inositol, Methionine, Citrus Bioflavonoid, 11 Vitamins (Including Blood-Building B-12 and Folic Acid) Plus 11 Minerals

To prove to you the remarkable advantages of the Vitasafe Plan . . . we will send you, without charge, a 30-day free supply of high potency VITASAFE C.F. CAPSULES so you can discover for yourself how much healthier, happier and peppier you may feel after a few days' trial! Just one of these capsules each day supplies your body with over *twice* the minimum adult daily requirement of Vitamins A, C, and D — *five times* the minimum adult daily requirement of Vitamin B-1, and the *full* concentration recommended by the National Research Council for the other four important vitamins! Each capsule contains the amazing Vitamin B-12, a remarkably potent nutrient that helps nourish your body organs. Vitasafe Capsules also contain Glutamic Acid, a natural substance derived from wheat gluten and thought by many doctors to help nourish the brain cells for more power of concentration and increased mental alertness. And now, to top off this exclusive formula each capsule also brings you an important dosage of Citrus Bioflavonoid — the anti-cold factor that has been so widely acclaimed. This formula is so complete it is available nowhere else *at any price!*

You can use these Capsules confidently because U. S. Government regulations demand that you get exactly what the label states — pure ingredients whose beneficial effects have been proven time and time again!

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